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PRESIDENTIAL ADDRESS AT THE ANNUAL GENERAL MEETING (M.A.S.A.), PRETORIA

R. SCHAFFER, M.B., CH.B., M.D. (DUBL.), *President of the Medical Association of South Africa*

This is the first occasion on which the Chairman of Federal Council, the Vice-Chairman of Federal Council and the President of the Association are general practitioners. We also have the honour to welcome a very distinguished guest in the person of the President of the British College of General Practitioners. It is, therefore, fitting that I should say something of the place of the general practitioner in our profession and of his important role in our society. But, before doing so, I must place on record that in our Association there is no distinction between general practitioner and specialist. We are all members of the same Association, we all accept the same code of ethics and we all agree that the interests of the Association, as a whole, are more important than the interests of a group.

My predecessor in office is a distinguished specialist anaesthetist, no doubt the more distinguished because he has had the benefit of general practice experience before entering the ranks of the specialists. We are grateful to him for what he has done for our Association. He was preceded in office by an ophthalmologist—a man of the highest repute, a man who made service to our Association his life's work, and whose passing has been a personal loss to all who have known him and to all who were honoured by his friendship. Dr. du Toit well deserved the highest honours which the Association could bestow on one of its members. No-one has given longer or more faithful service to our Association. He will long be remembered. On your behalf I would like to assure Mrs. du Toit and the members of her family of our sincere sympathy and of our genuine sense of personal loss.

Dr. R. Schaffer

We are living in an age of science. At the beginning of this century it was possible for one man to have knowledge of all branches of science. It is now impossible for a single human brain to comprehend more than a fraction of the knowledge that has been gained in even a limited field. This applies to all the sciences, including medical science. It is, therefore, no longer possible for one individual to be competent to diagnose and treat all the disorders that may affect the human being. There must, therefore, be men and

women with special training, with special knowledge and with special skills in the ranks of the profession.

We cannot do without the specialist. He has become an essential cog in the wheel of medical practice and medical progress. There should be no antagonism between general practitioner and specialist. Their functions are complementary and cooperation between them is essential. The one is certainly not inferior to the other in status and he should also not be held inferior in public esteem. Both are essential, but it is right to state that the health and well-being of society depends primarily on the well-trained, conscientious and competent general practitioner. The general practitioner remains the backbone of the medical profession. Fortunately for this country the standards are very high, both as regards general and specialist practice. I do not know of any country where the standards are higher.

A great deal has been said and written about the declining status of the general practitioner and the urgent need for his rehabilitation. I have personally never had occasion to complain of loss of status and I am, as yet, not in need of rehabilitation. There is, however, a very urgent need to readjust the general practitioner to the changing needs of society and to train him so that he will be better fitted to fulfil his many responsibilities.

THE NATURE OF GENERAL PRACTICE

In order to discuss how the future general practitioner is to be trained and how the present general practitioner is to adjust himself to the changing needs of society, let us enquire into the nature of general practice.

No-one can tell what a general practitioner will or will not have to do. This will depend largely on where he is to exercise his profession and on the changing demands made upon him by the population; but he must be capable of dealing with changing situations. He cannot possibly have a complete and detailed knowledge of every medical discipline and cannot be expected to treat each and every disorder that may affect the human being. He should also not be a 'screener' who determines to which specialist a patient is to be referred. He must be able to give advice, and in many cases treatment, in all forms of illness and in most cases he may be on his own. The general practitioner does not practice in the sheltered environment of the teaching hospital where responsibility for diagnosis and treatment is shared. He also cannot rely on the radiologist or on the pathologist to make up his mind for him. The responsibility for the patient is his and his alone. It is true that he can, at times, refer the patient to a hospital and it is also true that he should have the opportunity of treating his patient in hospital, or, at any rate, participating in the treatment of his own patient. But hospital beds are few, distances often great, and patients unwilling. He can, of course, when circumstances permit, refer a patient to a specialist or to a senior colleague, but this is not always possible.

The doctor who assumes the responsibilities of general practice must be prepared to cope with each and every emergency. His knowledge must be such that he is able to diagnose and treat the common or ordinary ailments. He may treat more serious conditions and undertake major procedures when he has had the necessary training and experience in the particular field. But he must have the honesty, the common sense and the judgment to realize his limitations and to refer his patient to a specialist or to a more experienced colleague when this is necessary.

The general practitioner does not only require the basic medical skills in diagnosis and treatment, he must understand the main ways in which hereditary factors, living conditions and social forces affect the human being favourably or otherwise, and, above all, he must recognize that each patient who calls on him for advice is not just a patient, but also a person. He will know after a few months in general practice that diseases in patients are not quite the same as diseases in text-books. His knowledge cannot be limited to the pure scientific knowledge of the aetiology, the signs and symptoms, and the pathology of organic disease, but he must have a wide understanding of human nature and appreciate how anxieties and stresses are not only responsible for functional diseases, but also influence the course, the symptoms and the prognosis in organic disease.

The health situation in all countries has changed rapidly during the past quarter of a century and much of this change is due to advances in medical science. Thanks to the introduction of antibiotics, diseases which were once common are now extremely rare; but diseases which were extremely rare or almost unknown a quarter of a century ago are now becoming much more common. Modern methods of anaesthesia have made almost every part of the human body accessible to surgical assault and modern methods of diagnosis have made accurate diagnosis possible in conditions which were previously only diagnosed on the post-mortem table.

Some of the demands made on medical practitioners have also been determined by such information as the public has gained about advances in medical science. Sensational news items in the lay press about marathon operations, performed not only in America, but also in Cape Town, about artificial kidneys available in Pretoria and about surgical advances and surgical miracles in Johannesburg, have created a public demand for new and sensational treatments, particularly when publications such as the *Reader's Digest*, confirm the sensational reports. It is, therefore, essential that the general practitioner be well informed regarding all recent developments so that he can not only give sound advice, but also safeguard his patient's purse. There would not be so many overseas journeys if members of the public realized that the same advice and treatment can be given nearer home. Much unnecessary expenditure and much unhappiness would also be avoided if the patient accepted the family doctor's advice about the suitability of the well-advertised treatment in the particular case.

Unfortunately, there has been insufficient change in the medical curriculum to fit the new graduate into general practice, and the opportunities open to the established practitioner for acquiring the new knowledge and the new outlook are also few and far between. Students are today not trained to be general practitioners and, unfortunately, are also not always encouraged to be general practitioners.

There was a time when a physician was a general practitioner who limited his practice, as far as possible, to internal medicine. He reached eminence and, therefore, consultant status, after years of experience in practice. Today the medical teacher reaches the highest status, not because he has been in practice, but because he has been careful since

graduation not to lose his place in the queue. Professorial status is often conferred on the research worker who has gained eminence in a particular field. Such research worker is not necessarily an authority on the problems of general practice and is also not necessarily a competent teacher. Very fortunately South Africa has produced outstanding research workers who are also excellent and inspiring clinical teachers. We have every reason to be proud of the achievements of our young medical schools and universities, but it is necessary to point out that teachers with general practice experience would perhaps be of greater value to the students who are to be the future general practitioners.

It has become necessary in all countries, but particularly in this country, to decide what is to be the objective of undergraduate medical education. If it is the intention to give men and women the basic training of a doctor who will be fit, after serving an internship and working as a hospital resident, to assume the responsibilities of general practice, then we should so arrange our medical curriculum and so organize our intern and residency training programme as to fit the graduate for the duties and responsibilities he will have to assume. The quality of our future specialists will not be lowered if, before embarking on specialist training, the doctor is first taught the rudiments of general practice. The knowledge and training required of a general practitioner will not later on hinder a specialist, but will rather be an asset to him, giving him a wider sense of proportion and perspective in the exercise of his specialty.

EQUIPMENT OF THE MEDICAL STUDENT

I have already referred to what the general practitioner should know and what he may have to do. I would now like to refer to the basic qualities required in the medical student which will equip him for training as a general practitioner. I am definitely of the opinion that no student should enter a medical school until he is an adult, both as regards behaviour and conduct. He must be adult, not only in years, but also in his general education. He requires integrity, intelligence and capacity for work. He does not require an ability to memorize unrelated and often unimportant facts for a limited period so that he can satisfy the examiners and so obtain a first class matriculation certificate. We do not want medical students and doctors who can remember a great deal but understand very little. Students can, unfortunately, not be given a general education after entering the medical school. No time is permitted for such luxury. The student should, therefore, have received a basic education before entering university.

It is essential that the doctor, in order to command respect and maintain a position of influence and importance in society, should be an educated man or woman. The future doctor must have the ability to understand. He must be able to integrate his knowledge and experience, since only in this way can judgment, which is the most essential of all the qualities required of a practitioner, be developed. Unfortunately, the matriculation certificate is not necessarily evidence of satisfactory or sufficient education to qualify for admission to a university, and our educational standards must be revised and improved. A year spent in post-matriculation studies is, I think, essential in many cases.

Basic general education must introduce the student to the worlds of science and of man, must train his powers of reason, of observation and of imagination and, above all, teach him to express himself clearly and with logic. According to John Morley, an educated man knows when a thing is proved while an uneducated man does not. According to Sir Richard Livingstone, an educated man knows and an uneducated man does not know what is first-rate, and the best educated man is he who knows the first-rate in the most important human activities. I think it is essential that a doctor should know what is first-rate and should also know when a thing is not proved.

It is essential that both the student and the doctor should know that education is a continuous process, that there is very little value in memorizing facts which are out of date almost before they appear in print. Knowledge of a particular vintage no doubt has historical significance, but the doctor must know how to evaluate, and how to evaluate critically, the knowledge of the present, always remembering that what is accepted as valid theory today may be proved wrong tomorrow. I think it will be generally accepted that our present generation has learned far too much, but has understood far too little. The future general practitioner must both learn and understand a great deal.

Our medical student, starting with a wide general education and having mastered the basic principles of the medical sciences, must be taught that the patient is more important than his disease, and he must be given the opportunity of learning something about his patient. An elementary knowledge of sociology is more important to the family doctor than a detailed knowledge of laboratory technique. A basic knowledge of the science and art of dietetics is also more useful than a detailed knowledge of the more unusual neurological lesions. Above all, the future general practitioner must be given the opportunity of studying the patient in his normal environment, not in the artificial environment of the teaching hospital. He must know how to diagnose and treat minor ailments, how to give advice on matters of health and hygiene and how to keep his patients well rather than send them to hospital to be 'patched' once they are ill. It is also becoming very necessary that general practitioners should have a special knowledge of the problems of aging. Improvements in public health and in medical care, as well as advances in medical knowledge, have so increased the life expectancy of the population that each year a larger percentage of the population will be old. This has already created problems both in sociology and medicine. Each year more of our patients will be suffering from the degenerative conditions associated with old age.

It cannot be emphasized too often that the acquisition of a degree in medicine and a licence to practice the ancient art is not the end of medical education; it is merely evidence of fitness to go out into the world and learn how to become a doctor.

It is necessary that every graduate should serve a compulsory apprenticeship in a suitable hospital, but it is wrong that the future general practitioner should serve his entire apprenticeship in specialist departments in teaching hospitals. He will obtain wider and more useful experience in smaller hospitals and he can only learn the practice and principles of general practice from those skilled and experienced in the art. Positions on the resident staffs of teaching hospitals should be reserved for those who, having qualified as general practitioners, wish to acquire more specialized knowledge so that they can become more useful

to their patients, or for those who after general practice training wish to become specialists.

EDUCATION OF THE PRACTITIONER

How is the established general practitioner to improve himself professionally and make himself more useful to society? It is, of course, essential that he be given the opportunity of continuing his education so that he can become more expert in those particular fields in which he has shown aptitude and ability. The action of the authorities in making expenditure on postgraduate studies deductable from taxable income, has been a step in the right direction. This concession is much appreciated by the profession, and will, no doubt, pay handsome dividends in improved professional standards. But income tax concessions are not enough. The general practitioner needs sufficient leisure to rest, to read and to think, and he needs a secure income so that he can afford to have the necessary leisure. Otherwise he cannot possibly continue his education.

Contrary to general belief, the average doctor does not earn a very high income. While some doctors are, of course, super-taxpayers, others have difficulty in making adequate provision for their families. While medical fees have almost doubled, the cost of providing the service has more than trebled. The car which used to cost £300 now costs £1,200. Rents are higher. Receptionists' salaries are higher, and taxation has made it almost impossible to save. I know many wealthy doctors, but most have either inherited farms or inherited money which has been wisely invested. They have not become wealthy from the proceeds of general practice.

It is necessary that general practitioners so organize their affairs that they will be financially secure so that they may have sufficient time for postgraduate education. This can only be done if two or more practitioners are associated in practice so that each can take leave at regular intervals. If each member of a medical firm makes a particular field his special study, it becomes possible, not only to give expert general practitioner service, but also to give competent advice and treatment in the more specialized fields. This may not be necessary, advisable, or even possible in the larger cities, but it is of great advantage to the inhabitants of the smaller towns. Group practice of this kind is the most satisfactory arrangement both to the doctor and to the patient.

There are younger specialists who may, perhaps, find it professionally satisfying and also economically advantageous to leave the medically overpopulated cities and join general practitioner groups in smaller centres. It will, of course, be necessary for such specialists to become expert general practitioners.

REWARDS FOR EXPERIENCE

It is difficult to understand why a competent and experienced physician or surgeon, who is also a competent general practitioner, should be compelled to charge less for his services than is charged by the specialist who may have the same qualifications, but who may not necessarily have equal competence or experience. It is also unreasonable to expect the senior and better-trained practitioner to charge the same fee as is paid to his most junior and least experienced colleague.

It is right and necessary that the charging of excessive and extortionate fees should be condemned and prevented. Unethical conduct of this kind deserves both censure and punishment. But it is also right that there should be additional rewards for additional experience, training and competence. If the fees paid to the general practitioner are too low, he is compelled to see too many patients. The doctor who, as a result of his economic circumstances, or as the result of the nature of his practice, is compelled to see too many patients, cannot possibly give those patients the service he would give had an increased fee made it possible to devote more time to each case.

It is the accepted policy of the Medical Association of South Africa that, as far as possible, each patient should have free choice of doctor and that each doctor should have free choice of patient. I am satisfied that this is the right policy. Unfortunately, it is not always possible to apply this policy to patients in the lower-income group. Some form of panel system, giving either limited choice of doctor, or no choice of doctor, has been unavoidable for these patients. Irrespective of the nature of his practice, whether the general practitioner is engaged in private practice or is in full-time employment, he must be adequately remunerated and he must have adequate periods of rest and leisure so that he can give good service and keep himself up-to-date.

This country has undergone an industrial revolution. A major portion of our population, both White and non-White, has migrated to the cities and has become industrialized. It is inevitable that in an industrialized society the employers of labour must become interested in the health and welfare of their employees. It is in the interests of organized industry that there should be adequate medical services for all employed in such industry. There is no reason why organized industry and organized medicine should not agree on the best method of providing such services.

The specialist register introduced in 1938 has served one very useful purpose, in that it has restricted specialist practice to those who have been adequately trained. As the expert general practitioner should be as well trained as the competent specialist, he should enjoy equal status and be entitled to equal remuneration. Only the consultant, who sees patients only when referred to him by another practitioner, should have a higher status. Any doctor who is suitably qualified and who enjoys the confidence and respect of his colleagues, should be entitled to become a consultant. There can be consultants in all the specialties and the experienced general practitioner who becomes a consultant may in some cases render the most useful service.

A COLLEGE OF GENERAL PRACTITIONERS

When the South African College of Physicians, Surgeons and Gynaecologists was founded, it was hoped that opportunities would be provided for the professional advancement of the general practitioner. It is hoped that general practitioners will be admitted to the higher examinations of the College on the basis of their general practice experience and on the basis of experience gained in non-teaching hospitals. While, in the opinion of some, experience gained only in the teaching hospital is of value, in the opinion of others experience gained only in the teaching hospital is not enough. It is advisable that the clinical facilities and the clinical

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VAN DIE REDAKSIE : EDITORIAL

DIE TANG IN VERLOSKUNDE

Die ontdekking van die verloskundige tange was sekerlik een van die belangrikste gebeurtenisse in die geskiedenis van die verloskunde. Dit het in 'n tydperk, toe die medici vir die eerste keer werklik in die vrou en in kraam begin belangstel het, gekom en dit het die verloskundige die geleentheid gegee om die meganika van normale sowel as abnormale kraam te bestudeer. So groot was die voordeel wat hierdie instrument die verloskundige van twee eeue gelede gegee het, dat dit die haat van die vroedvrou afgedwing het en haar alles in haar vermoë laat doen het om dit as 'n afgryslike instrument vir die pasiënt in kraam voor te stel. Soos die reëls vir die gebruik van tange meer bekend geword het, het die instrument meer en meer in gebruik gekom, maar selfs vandag nog het die duiwelse reputasie van hierdie instrument bly voortleef en word dit nog as iets vreesliks beskou deur menige vroedvrou en selfs deur dokters.

In die afgelope 25 jaar het daar groot veranderings in die verloskunde plaasgevind en hierdie veranderings moes noodwendig ons beskouing oor die gebruik van tange verander. Teenstrydig met wat baie medici in ons land glo, het die redes vir die gebruik van die tang—hoewel verander deur die meer algemene gebruik van die keisersnee—vermeerder, en is dit noodsaaklik om die tang meer dikwels te gebruik as wat algemeen aangeneem word. In die Liverpool-Kraamhospitaal het tangverlossings van 6-7% tot 16-17% in 1950[1] gestyg en in 1951 was dit 13·4% in die Queen Charlotte-Hospitaal in Londen.[2]

Om ons bewering dat die redes vir die gebruik van die tang ook verander het te staaf, noem ons 'n paar voorbeelde: Die gebruik van tange om disproporsie bo die midbekken te oorkom, word vandag glad nie meer geregverdig nie omdat die keisersnee hier die aangewese behandeling behoort te wees. In teenstelling hiermee veroorsaak 'n vernoude uitgang, indien die ingang en holte van die bekken normaal is, byna nooit moeilikheid nie. Waar moederlike en foetale nood in die verlede die hoofredes vir tangverlossings was, word hierdie komplikasies deur die vroeë gebruik van die tang voorkom. Hierdie vroeë gebruik van die tange, veral as die kop op die perineum teruggehou word, is deur De Lee[3] as ‚profilaktiese tangverlossings' beskryf. Aangesien die derde stadium met ons veranderde ergometrien-tegniek makliker beheer kan word en ook omdat verwydering van die placenta met die hand met minder gevare gedoen kan word, is die ou idee om tange, wanneer die sametrekkings swak is, nie te gebruik nie, verwerp. Toets-tangverlossings vir die kop wat in die midbekken terruggehou word, soos deur Jeffcoate[1] beskryf, het ook die term ongeslaagde tangverlossing laat verdwyn en verhoed dat die trotse verloskundige, wat nie sy fout wil erken nie, met brutale krag 'n tangverlossing uitvoer. Die meer algemene gebruik van die Kielland-tang soos deur Jones[4] beskryf, het tot die maklike verlossing van die kop in die dwarsoponthoud en posteriale posisies bygedra. Die gevaarlike hoë tangverlossing, waar die kop bokant die bekkeningang gedruk is met draaiings met die hand, is dus uitgeskakel. Hier moet egter gewaarsku word dat die gebruik van die Kielland-tang in ongeoefende hande uiters gevaarlik kan wees. Die gebruik van tange met die verlossing van die kop in stuitgeboortes—veral met voortydige babas—is ook vandag 'n algemene gebruik.

Die prognose van sowel die moeder en baba met tangverlossings is vandag besonder goed. Uit 3,522 tangverlossings in Liverpool vanaf 1936 tot 1950 was daar 13 moederlike sterfgevalle, waarvan 6 as gevolg van die narkose was. In Queen Charlotte-Hospitaal in Londen was daar uit 1,793 tangverlossings, vanaf 1946 tot 1951, 2 sterfgevalle waarvan nie een aan die tangverlossings toegeskryf kan word nie. Die foetale sterftesyfer het ook in eersgenoemde hospitaal gedaal tot 2% en in laasgenoemde tot 5%.[2]

Het 'n tangverlossing dan enige voordeel vir moeder en baba? Dit maak bepaald die kraam—veral in die fisies swakker vrou—korter en dit gee ons ook die geleentheid om 'n baba in 'n beter toestand te verlos. Dit spaar die moeder baie van die fisiese en geestelike stremming wat sy in 'n lang kraam moet verduur. Indien 'n groot episiotomie en 'n vroegtydige tangverlossing gedoen word, kan baie gevalle van prolaps van die geslagsdele in later leeftyd verhoed word. Dit is ook bewys dat die tange aan die kop, veral in stuitgeboortes[5] en ook met skedelgeboortes[6], beskerming verleen. Laasgenoemde is veral in geboortes van voortydige babas en babas van toksemiese moeders, waar.[7]

Waarin dan lê die groot gevaar met tangverlossings? Een van die faktore is dat dit gewoonlik as 'n laaste poging aangewend word om 'n alreeds verswakte moeder en 'n kind in sy laaste doodsnikke te probeer red. Die vroegtydige gebruik van die tange sal hierdie toestand van sake vermy. Soms word alle soorte tangverlossings in huise probeer, maar dit word ten strengste afgeraai. Alleen lae tangverlossings, waar die kop op die perineum lê en goed onderkant die spina ischiadica is, behoort in huise aangepak te word. Die algemene narkose is gewoonlik die oorsaak van meeste van die moederlike sterfgevalle omdat 'n narkose aan 'n pasiënt wat nie goed voorberei is nie, toegedien word. Soveel sukses is met lokale narkose, veral pudendale blok, behaal dat dit ten sterkste, veral vir alle lae tangverlossings, aanbeveel word. Die laaste en mees belangrikste rede is sekerlik die verkeerde diagnose van die posisie van die kop en die grootte van die bekken en dan die verkeerde aansit van die tang. Dit skryf ons toe aan die feit dat nie genoegsame opleiding aan ons studente in die gebruik van tange gegee word nie. Baie selde word 'n student die geleentheid gegee om tange aan te sit wanneer hy sy kraamopleiding doen. Dit word besef dat dit nie prakties sal wees om vir al die studente die kans daartoe te gee nie, dus beveel ons aan dat 'n huisdokterskap in verloskunde deel van die verpligte jaar van hospitaalopleiding behoort uit te maak. Is die verloskunde dan nie die deel van die algemene praktisyn se werk waar hy die grootste verantwoordelikheid dra nie?

Dit is gevaarlik om die tang te veel aan te prys want dit

mag misbruik word. As dit egter oordeelkundig gebruik word, kan dit van onskatbare waarde wees en sal dit nie meer as iets skrikwekkends beskou word nie, maar wel as 'n instrument van verlossing.

1. Jeffcoate, T. N. A. (1953): Brit. Med. J., 2, 951.
2. Lewis, T. L. T. (1956): *Progress in Obstetrics and Gynaecology*. Londen: Churchill.
3. De Lee, J. B. (1920): Amer. J. Obstet. Gynec., 1, 34.
4. Jones, E. P. (1952): *Kielland's Forceps*. Londen: Butterworth.
5. Cox, L. W. (1950): J. Obstet. Gynaec. Brit. Emp., 57, 197.
6. Assali, N. S. en Zacharias, L. F. (1947): Amer. J. Obstet. Gynec., 54, 651.
7. Hamilton, J., Jeffcoate, T. N. A. en Lister, U. M. (1949): J. Obstet. Gynaec. Brit. Emp., 56, 413.

POLYMYOSITIS

In 1863 Wagner used the term polymyositis to describe an acute generalized muscular condition with skin involvement that ended fatally within 6 days of its onset. Subsequently, most reports indicated uncertainty regarding the relationship between muscle diseases and skin lesions, the early authors using the terms polymyositis and dermatomyositis indiscriminately. Today it is recognized that there is a condition of polymyositis without skin involvement.

Recently Walton and Adams[1] have published a monograph, based on their experience with 40 cases in north-eastern America, in which an 'idiopathic' generalized disease of muscle is analysed in detail and compared with other myopathies. This polymyositis does exist in acute, subacute and chronic forms. The acute condition is rare, but the subacute and chronic varieties are more commonly found and are accompanied by little or no constitutional disturbance, pain or muscle tenderness, so that diagnostic errors can readily occur. Distinction from such diseases as progressive muscular dystrophy or myasthenia gravis may be difficult, so that special procedures such as electro-myography and muscle biopsy may have to be utilized.

Many attempts at classification of this pleomorphic syndrome have been made, but since even a single case may vary from time to time and qualify for inclusion in more than one group, and since the aetiological factors are unknown, arbitrary grouping has perforce to be accepted at present. Walton and Adams consider polymyositis (confined to the muscles) in one group, polymyositis with collagen disease (dermatomyositis) in another, severe collagen disease with minor muscle weakness in a third group, and polymyositis or dermatomyositis in association with malignant disease, in a fourth group.

The clinical picture of polymyositis may resemble a number of muscle, nerve or skin disorders and the pathological appearance may be relatively non-specific. Some of the more important points of differentiation from muscular dystrophy mentioned in the monograph of Walton and Adams are: (1) In childhood polymyositis tends to be the more common in females, (2) in many cases the disease progresses more rapidly than in the dystrophy, (3) spontaneous remissions may occur (unknown in dystrophy) and (4) all proximal limb muscles tend to become equally involved, unlike the distribution in dystrophy. The neck muscles, too, are usually severely affected; muscular atrophy is generally not as severe and pseudohypertrophy is uncommon. In polymyositis muscular pain and tenderness are much more likely to occur than in muscular dystrophy, and other changes in skin or collagen tissue may be present; the pathological picture of the muscle, as shown in electromyograms and biochemical tests, will indicate polymyositis as a specific syndrome in the majority of cases. The authors consider the various aspects of the disorder in detail.

There is general agreement that in many cases of this syndrome the disease process is related to the collagen or connective-tissue diseases. In some cases recovery occurs spontaneously, while other cases respond to adrenal steroid or corticotrophin therapy. The characteristic muscular symptoms and signs of polymyositis may precede, coexist with, or follow, collagen diseases such as dermatomyositis, scleroderma, disseminated lupus erythematosus, calcinosis universalis, and rheumatoid arthritis; while there may be cases unrelated to the collagen group.

It would appear that there is a syndrome of idiopathic polymyositis with the features indicated above. Polymyositis is an acute, subacute or chronic condition which may occur at any age, in either sex, in any form, in any site and with malignant disease. Weakness of muscles occurs particularly in the girdle and proximal limb muscles; variable constitutional symptoms and possibly florid skin or joint lesions may occur as well. The course of the disease may be rapidly progressive to a fatal termination with myoglobinuria in some very acute cases, or it may be subacute or slow. Some cases recover spontaneously, or only after steroid or corticotrophin administration.

1. Walton, J. N. and Adams, R. D. (1958): *Polymyositis*. Edinburgh and London: Livingstone.

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material available at our non-teaching hospitals should also be used for teaching purposes. This would be very useful to the undergraduate, but has, I think, become essential for the postgraduate.

In America, general practitioners have provided for their educational needs by organizing the American Academy of General Practice. In Great Britain general practitioners have improved their status and increased their educational possibilities by establishing the College of General Practitioners. I think the time has come that the general practitioners of South Africa should organize their own Academy of General Practice or their own College of General Practitioners, dedicated to the advancement of general practice, to improving the standards and the opportunities of the family doctor and to improving the quality of medical care for all the citizens of South Africa.

URINARY OESTROGEN LEVELS IN MYOCARDIAL INFARCTION

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It is well known and generally recognized that there is a marked sex difference in the incidence of myocardial infarction and that coronary thrombosis occurs less frequently in premenopausal women than it does in men of comparable age. In the Union of South Africa between 1926 and 1954 the toll of coronary disease increased from 0·9% to 19·6% for males and from 0·53% to 11·6% for females. In 1954 the mortality rate from coronary artery disease was 177·0 and 74·3 per 100,000 for males and females respectively.[1] Smit has also shown that in the younger age groups relatively more males than females died of this disease, and that the difference in mortality rate progressively decreased with the increase in the age of the group.

An analysis of 1,000 consecutive cases attending the Edinburgh Royal Infirmary, all of whom had evidence of myocardial infarction or ischaemia, indicated an incidence 15 times higher in men than in women under the age of 40; an incidence 7 times higher in men under the age of 50 and only a 2 : 1 ratio of men to women under the age of 60. Oliver and Boyd, in view of the above findings, suggested that since the incidence of coronary artery disease increases after natural or artificial menopause, the development of the disease may be accelerated by changes in hormonal balance.[2]

Hueper[3] states that atherosclerosis (as exemplified by coronary sclerosis) occurs much more commonly in men than in women, and that the recent increase in the frequency of coronary artery disease in the USA affected men more than women.

In England and Wales in 1954, deaths attributed to coronary artery disease were 41,688 males and 23,983 females. The disparity in sex distribution was most evident in the younger age groups where the male female ratio was 5-6 : 1 whilst in the older age groups 75 years and over, there was a ratio of less than 2 : 1.[4]

Lee and Thomas[5] have shown that in the older age groups the incidence of acute myocardial infarction in females is proportionately greater than in males. The incidence in women rose steadily with age, but was stationary in males from 60 to 80 years of age, when the incidence decreased. These findings were consistent with the theory that female sex hormones inhibit the development of atherosclerosis since these hormones decrease progressively with age.

Pell and D'Alonzo[6] have shown that, of 209 persons (age range 25-64 years) employed at the Du Pont Company, who developed myocardial infarction during a 1-year period, the most striking factor was the difference in sex incidence, which was 0·2 cases per 1,000 female employees and 2·9 cases per 1,000 male employees. The ages of the 2 female patients were 60 and 64 years respectively.

Current investigations in many countries show a pronounced difference between the two sexes in mortality from myocardial ischaemia in the 40-59 year age groups, males showing a considerably higher mortality than females.

This sex difference between the incidence and mortality rates has given rise to much speculation and has led to the theory that in females some endocrine sex factor may exert a protecting effect, which may operate until after the menopause, although to a diminishing degree. Keys[7] though, in a recent symposium on arteriosclerosis, in discussing the role played by non-dietary factors in the aetiology of atherosclerosis, suggested that even the sex factor may have its limitations. He showed that in population groups with a relatively low, compared with a high death rate from the disease, the sex ratio tends to become narrower. One of us (I.B.)[8] has inferred from the above that among the South African Bantu, where the incidence of coronary thrombosis is almost negligible, the sex difference may well be no longer apparent. We suggested the possibility that it required a particular environmental (dietary and non-dietary) context, highly promotive of mortality from coronary artery disease, to 'light up' the sex factor; the latter not being apparent in a context which promotes a low death rate from the disease.

The above observations are borne out in a recent WHO report on *A Study Group of Atherosclerosis and Ischaemic Heart Disease*. The report states, *inter alia*, that 'in populations where ischaemic heart disease is frequent, as in the USA, the ratio of male to female deaths from ischaemic heart disease is very high in young persons and diminished after the menopause, whereas in countries such as Italy and Portugal the disparity in frequency is smaller'. This report further states that the mortality from coronary artery disease in married women in the age group 45-49 years is greater in those with no children than in those having children.[9]

One of the reasons why a small number of experienced cardiologists maintain that at the present time there is no marked sex bias in the incidence of coronary disease is that the clinical course of ischaemic heart disease tends to be somewhat different in the two sexes—in the male the onset and course is more sudden and dramatic and with a rapidly fatal outcome. This might account for the fact that recent hospital surveys in Sweden and the USA (and possibly in South Africa) show more female patients than might be expected from the mortality statistics of the regions concerned.[9]

Experimental and clinical evidence suggests that oestrogens may play an important role in the relative immunity from coronary artery disease in the premenopausal woman, and that oestrogen therapy to the atherosclerotic male favourably alters an abnormal lipoprotein pattern to that of a normal one. Thus, Katz and his co-workers have shown that the administration of oestrogenically active compounds (orally or parenterally) to cholesterol-fed cockerels results in an increase in the ratio of free to total plasma cholesterol, in enhanced hyperphospholipaemia with a lowering of the cholesterol phospholipid ratio, and in a reduction in the alpha-lipoprotein and Sf 20-100 levels and that it prevents coronary atherogenesis without influencing the formation of aortal lesions. Katz further quotes work done in his laboratories on cockerels in which he shows that the coronary vessels are practically free of lesions when oestrogens and an atherogenic diet are administered simultaneously, and that oestrogen reverses both the lipophage and fibroblastic components of coronary atherosclerotic plaques. Katz and his co-workers have also shown that sexually mature chickens, unlike immature birds but like sexually mature humans, exhibit a

significant sex susceptibility to coronary atherosclerosis.[10-14]

Barr[15] has shown that the administration of oestrogen to men who have survived one or more myocardial infarctions, results in the restoration to normal of the usually gross abnormal lipid disturbances found in atherosclerosis; i.e., oestrogen administration results in an increase in alpha-lipoprotein levels with a corresponding decrease in the beta fraction, a reduction in serum-cholesterol levels, and a marked improvement in the cholesterol-phospholipid ratio of serum and beta lipoprotein fraction. Women, too, who have survived a myocardial infarction, show similar improvement when treated with oestrogens. The effects of androgen therapy on the lipid picture are in the main exactly opposite to the beneficial effects of oestrogens.

Eilert[16] has shown that increased oestrogen levels depress plasma cholesterol, and Boyle[17] has reported reduction in all serum lipids, including cholesterol, in humans during long-term administration of oestrogens.

Wuest *et al.*[18] reported that in oophorectomized patients coronary sclerosis, decade for decade, was of a greater degree of severity than in a control group and conclude that ovarian hormones exert at least one of the influences in the development of atherosclerosis.

Cooper [19] has shown that under the influence of oestrogens the lipoprotein pattern as well as the atherogenic index improved remarkably, whilst Gitman[20] has shown similar effcts following a single intravenous injection of oestrogen.

Gertler *et al.*[21] have shown a paucity of atherosclerosis in eunuchs and a greater liability of patients with predominant 'maleness' to myocardial infarction, whilst Cooper[19] has shown that castrated males, eunuchs and eunuchoids have lipoprotein patterns similar to those observed in healthy young females.

It has been shown by Oliver and Boyd[22] that changes in plasma lipids occur during the menstrual cycle. A striking fall in the plasma cholesterol esters, a less marked decrease in phospholipids and thus a decrease in the cholesterol-phospholipid ratio, occurred at the time of ovulation and immediately before menstruation, and they suggested that the point where the plasma cholesterol-phospholipid ratio is lowest coincides with the phase in the menstrual cycle where oestrogen activity is maximal. One of us (I.B.) has shown similar findings, namely a decrease in total cholesterol due mainly to a decrease in the esterified fraction and a far smaller decrease in the serum phospholipid at the mid-menstrual cycle, i.e. at the time of ovulation. It has also been shown at this Institute that oestrogens administered in small doses to male hypercholesterolaemic patients who had had a myocardial infarction resulted in a lowered cholesterol phospholipid ratio.[23]

Oliver and Boyd[2] and Steiner *et al.*[24] have also shown that ethinyl oestradiol is effective in improving the abnormal lipoprotein patterns which occur in clinical coronary artery disease. Ethinyl oestradiol was the most potent oestrogen in this respect, although hexestrol and oestradiol produced similar trends. Oestrone and oestriol failed to produce any significant alterations in the lipid picture when administered in doses of equivalent oestrogenic potency.

Boyle[25] treated a group of patients suffering from proved coronary artery disease and a group of hypercholesterolaemic patients suffering from xanthomatosis tuberosum and/or tendinosum with varying doses of ethinyl oestradiol. This treatment resulted in a reduction in all serum-lipid levels—a decrease in the cholesterol-phospholipid ratio, a marked decrease in the beta lipoprotein levels and an increase in the alpha level.

From the above review two facts emerge:

1. That a marked sex difference in the incidence of coronary thrombosis exists.

2. That experimental and clinical observations suggest that oestrogen administration rapidly reverts abnormal lipid patterns to relatively normal ones.

A COMPARATIVE STUDY

One of the most commonly recognized factors, in the aetiology of coronary thombosis to date is the broad interrelationship between dietary fats, lipid disturbances, and the development of atherosclerosis. However, since men and women under the age of 50 consuming almost identical diets show such marked differences in the incidence of coronary atherosclerosis, it was felt that a comparative study on urinary oestrogen levels in a group of normal male subjects and in a similar group, matched for age, of male patients who had recently suffered from a coronary occlusion, might be profitable.

We have previously suggested that alterations in the balance between male and female sex hormones may well be involved in the observed differences between cholesterol levels in the South African Bantu and White subjects, and indirectly in the very low incidence of coronary thrombosis in the former.[26,27]

We have already shown that total oestrogens as well as the very active and potent oestradiol fraction is significantly higher in the young male Bantu compared with young White subjects.[27] If oestrogen levels play a role in the aetiology of coronary atherogenesis then an entirely different oestrogen pattern should be found (on comparing oestrogen levels) in a group of subjects who have recently experienced a myocardial infarction when compared with a similar group who clinically show no evidence of coronary artery disease. Such a comparative study forms the basis for this investigation.

We obtained 24-hour specimens of urine from 20 European males subjects employed at the South African Institute for Medical Research and who were in excellent health, and from 23 European male subjects who were patients at the Johannesburg General Hospital. All the latter had been hospitalized for a recent acute myocardial infarction. This diagnosis was based in each case on clinical evidence and confirmed by ECG.

The age ranges and mean ages for the normal group was 44-65 years (mean 55) and for the myocardial infarction group 42-81 years (mean 57) respectively.

The technique used for estimating total oestrogen, oestradiol, oestrone and oestriol was that described by Brown[28] and identical with that used by us when we compared urinary oestrogen levels in normal young male urbanized South African Bantu and young normal White subjects.[27]

RESULTS

Tables I and II show the amounts of total oestrogen, and the absolute and relative amounts of the 3 fractions oestradiol, oestrone and oestriol, which we found in 24-hour specimens of urine from the normal and coronary artery disease subjects respectively.

The mean total urinary oestrogen value in the normal European (mean age 55) was 14·4 μg. as compared with 10·8 μg. in the acute myocardial infarction group (mean age 57).

The mean oestradiol value was 2·1 μg. in the healthy sub-

TABLE I. ANALYSIS OF THE OESTROGEN CONTENT OF 24-HOUR SPECIMENS OF URINE IN NORMAL EUROPEAN MALE SUBJECTS (AVERAGE AGE 55)

Age	Oestradiol µg.	Oestradiol %	Oestrone µg.	Oestrone %	Oestriol µg.	Oestriol %	Total Oestrogen µg.
45	2·5	18·1	4·9	35·5	6·4	46·4	13·8
60	3·3	22·0	8·7	58·0	3·0	20·0	15·0
65	0·8	4·8	8·4	50·3	7·5	44·9	16·7
52	0·9	6·0	8·1	53·6	6·1	40·4	15·1
60	3·4	19·1	9·0	50·6	5·4	30·3	17·8
48	1·1	9·3	5·4	45·8	5·3	44·9	11·8
61	0·5	4·7	3·5	33·0	6·6	62·3	10·6
57	1·6	9·1	11·3	64·6	4·6	26·3	17·5
57	0·9	5·2	3·5	20·5	12·7	74·3	17·1
44	1·0	17·9	3·3	58·9	1·3	23·2	5·6
48	1·7	8·1	12·5	59·2	6·9	32·7	21·1
54	3·5	21·3	6·2	37·8	6·7	40·9	16·4
47	3·5	21·6	7·2	44·4	5·5	34·0	16·2
58	3·8	23·7	4·8	30·0	7·4	46·3	16·0
57	3·0	17·9	6·4	38·1	7·4	44·0	16·8
52	2·1	13·1	6·4	40·0	7·5	46·9	16·0
53	1·7	14·4	5·2	44·1	4·9	41·5	11·8
59	2·8	28·6	3·4	34·7	3·6	36·7	9·8
65	1·2	18·7	2·8	43·8	2·4	37·5	6·4
58	2·9	17·3	5·7	33·9	8·2	48·8	16·8
Mean: 55	2·1	15·0	6·3	43·8	6·0	41·2	14·4

TABLE II. ANALYSIS OF THE OESTROGEN CONTENT OF 24-HOUR SPECIMENS OF URINE IN EUROPEAN MALE SUBJECTS SUFFERING FROM ACUTE MYOCARDIAL INFARCTION (AVERAGE AGE 57)

Age	Oestradiol µg.	Oestradiol %	Oestrone µg.	Oestrone %	Oestriol µg.	Oestriol %	Total Oestrogen µg.
48	2·0	26·3	1·5	19·8	4·1	53·9	7·6
64	2·5	16·6	7·9	52·3	4·7	31·1	15·6
55	0·1	2·2	1·3	28·2	3·2	69·6	4·6
47	0·8	5·1	5·1	32·7	9·7	62·2	15·6
58	0·9	8·4	3·0	28·0	6·8	63·7	10·7
48	0·0	0·0	9·6	82·8	2·0	17·2	11·6
43	1·9	11·5	4·2	25·5	10·4	63·0	16·5
64	0·3	6·7	1·9	42·2	2·3	51·1	4·5
52	0·1	3·7	0·7	25·9	1·9	70·4	2·7
71	0·0	0·0	3·0	30·9	6·7	69·1	9·7
48	0·5	10·2	0·6	12·2	3·8	77·6	4·9
42	1·2	12·1	5·2	52·5	3·5	35·4	9·9
51	1·7	13·9	6·0	49·2	4·5	36·9	12·2
66	0·4	2·3	6·0	33·3	11·6	64·4	18·0
68	0·0	0·0	2·8	32·6	5·8	67·4	8·6
46	0·2	2·2	2·2	23·7	6·9	74·1	9·3
65	0·0	0·0	4·8	51·6	4·5	48·4	9·3
80	0·0	0·0	2·4	23·1	8·0	76·9	10·4
81	0·0	0·0	1·1	6·4	16·2	93·6	17·3
43	0·2	2·3	3·3	38·4	5·1	59·3	8·6
56	2·2	9·2	6·9	29·0	14·7	61·8	23·8
60	0·0	0·0	3·3	33·0	6·7	67·0	10·0
56	1·9	18·5	4·3	41·7	4·1	39·8	10·3
Mean: 57	0·7	6·5	3·7	34·6	6·4	58·9	10·8

jects as compared with 0·7 µg. in the patients: whilst the percentages of oestradiol to total oestrogen were 15% and 6·5% respectively.

The mean oestrone value was 6·3 µg. with a percentage of 43·8% in the healthy group as against 3·7 µg. and 34·6% in the myocardial infarction group.

The mean oestriol value was 6 µg. and 41·2% in the normal group and 6·4 µg. and 58·9% in the patients.

These results, when subjected to statistical analysis, show the following:

1. A very highly significant decrease in the total oestrogen level per 24-hour specimen of urine in the coronary patient when compared with the normal European group ($p = < 0·005$).

2. A very highly significant decrease in the absolute oestradiol level ($p = < 0·005$) and a very highly significant decreased percentage of oestradiol in the coronary group ($p = < 0·005$).

3. A very highly significant decrease in the absolute oestrone level ($p = < 0·005$) and a statistically significant decreased percentage in the coronary group ($0·01 < p < 0·025$).

4. No significant differences in the absolute oestriol values in the 2 groups but a very highly significant *increased* percentage of oestriol was found in the coronary group ($p = < 0·005$).

When the values obtained by us in the group of European subjects of a mean age of 55 are compared with the values previously obtained by us in Europeans of a younger age group (mean 31 years) we find that the total oestrogen,

absolute oestradiol, oestrone and oestriol levels are statistically higher in the former group. No significant differences were observed in the percentage of oestradiol, whilst the oestrone percentage was statistically lower and the oestriol percentage significantly higher in the older age group.

DISCUSSION

The oestrogenic steroids are oestradiol, oestrone and oestriol. The oestradiol fraction may be regarded as the true oestrogenic hormone and the oestrone and oestriol fractions as breakdown products. Oestradiol and oestrone are interconvertible and both these steroids can be excreted as oestriol (the relatively inert fraction). Alpha oestradiol is approximately 12 times more potent than oestrone and at least 80 times more potent than oestriol.

Our results show that not only is the total urinary oestrogen level lower in the myocardial infarction group but that the potent oestradiol fraction is significantly lower (both relative and absolute) in this group and the inert fraction oestriol is significantly higher.

Bauld *et al.*[29] carried out a preliminary investigation in the metabolism of oestrogen in men with myocardial infarction. The technique for oestrogen determination was the same as used by us: 400 μg. oestradiol 17 β in oil were injected intramuscularly in a control group of normal men and in a group of male subjects who had experienced a previous myocardial infarction. The total amount of oestrogen excreted after the injection was similar in the two groups but there was a marked difference in the relative proportions of oestriol and oestrone. The urinary oestriol: oestrone ratio was significantly higher in the infarction group than in the control group. These findings were unrelated to age or to the interval after the infarction. The findings of Bauld and his co-workers suggest a disturbed metabolism of oestrogen in those who have had a previous myocardial infarction.

If we compare the ratio of oestriol to oestrone in the two groups studied by us, we find in the coronary artery disease group a ratio of 1·7 : 1 and in the control group a ratio of 0·94 : 1. These findings substantiate those of Bauld *et al.*

When we compare the ratio of the most potent fraction oestradiol to the least active fraction oestriol a ratio of 0·11 is obtained in the coronary group as against a ratio of 0·36 in the control group. Table III shows the ratio of oestradiol to oestriol obtained by us in a group of young Bantu urban

TABLE III. RATIO OF OESTRADIOL TO OESTRIOL IN URBANIZED BANTU AND EUROPEAN MALE SUBJECTS (MEAN AGE 31 YEARS), IN NORMAL MALE EUROPEANS (MEAN AGE 55), AND IN MALE CORONARY PATIENTS (MEAN AGE 57)

Bantu (*mean age* 31)	*European* (*mean age* 31)	*European* (*mean age* 55)	*Coronary Group* (*mean age* 57)
0·71	0·43	0·36	0·11

males and young normal European male subjects compared with the ratios obtained in this investigation. These findings show that the metabolism of oestrogens in patients suffering from coronary artery disease differs markedly from that found in young healthy subjects who are relatively immune from coronary occlusion.

The metabolism in the coronary group seems to be markedly accelerated, yielding a much higher percentage of oestriol with a consequent alteration of the ratio of the active to the inactive fractions. In the Bantu, where the incidence of coronary artery disease is very low, a retarded breakdown of oestradiol is found, and in normal European subjects the metabolism is intermediate between that of the Bantu and the diseased group.

Marmosston *et al.*,[30] using a biological technique for oestrogen determination, compared urinary oestrogen levels in postmenopausal women with and without evidence of myocardial infarction: 55% of the women in the control group excreted 0·50μg. or higher oestradiol as compared with 22% in the infarcted group. The control group excreted 0·516 μg. equivalents of oestradiol as against 0·244 μg. in the myocardial infarction group. These findings, too, suggest an altered metabolism of oestrogen in coronary atherosclerosis and they confirm our findings.

Stamler *et al.*,[31] in an interim report on the effects of oestrogen therapy in males with a history of a previous single myocardial infarction, show that in a placebo-treated group of 26 patients under treatment for 2 months or longer a second infarction occurred in 6, with 3 fatalities, whilst in 39 subjects under oestrogen therapy for a similar period no recurrences occurred. Despite the short duration of treatment and the small numbers treated, it was felt that continuation and expansion of this investigation was warranted.

Our present together with our previous findings, when taken in conjunction with available experimental and clinical evidence, tend to support the thesis that the gonadal steroid- play an important role in the aetiology of coronary atheros genesis.

The different patterns of metabolism of oestrogens in the Bantu, when compared with the myocardial group, conceivably plays an important role in the almost non-existence of coronary thrombosis in the Bantu. Many factors could conceivably be responsible for the altered hormonal pattern, and it is even possible that the type of diet consumed by them directly or indirectly influences their endocrine system and may in part be responsible for it; in fact, unpublished work carried out in our laboratories seems to suggest that European subjects when habituated to the 'Bantu type of diet' show an oestrogen pattern very similar to that of the Bantu.

The role played by oestrogens in the prevention and therapy of coronary artery disease needs further intensive study, but the comparative immunity of premenopausal women to coronary thrombosis, the different sex incidence, and the rarity of coronary thrombosis in the Bantu, suggest that the gonadal steroids may be of vital significance in the development of coronary atherosclerosis.

SUMMARY

1. Experimental and clinical evidence suggesting that oestrogens play a role in coronary atherosclerosis are reviewed.

2. Urinary oestrogen levels in 20 normal European middle-aged male subjects and 23 European middle-aged hospitalized subjects suffering from a recent myocardial infarction were determined.

3. Highly significant decreases in the total oestrogen level were found in the myocardial infarcted group.

4. Decreased absolute and relative oestradiol and oestrone levels and a highly significant increased relative level of oestriol were found in the coronary group.

5. It was suggested that the metabolism of oestrogens is accelerated in the coronary group, that a retarded breakdown

of oestradiol is found in the Bantu, whilst the normal European occupies an intermediate position.

6. The possible role played by a particular diet on oestrogen metabolism is discussed.

7. The suggestion is made that the gonadal steroids are important in the development of coronary atherosclerosis.

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LOCKED TWINS

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Locking of twins is a very rare complication, said to occur about once in every 90,000 deliveries and in 1 of every 1,000 cases of multiple pregnancy. Various forms of locking are described, but some of these are more accurately referred to as 'collision' of twins, e.g. when both heads present and become jammed at the brim and/or in the cavity of the pelvis. Reviewing the literature, we have found references to and reports on 12 cases of this variety recorded to date. Locking or collision, where one foetus presents by the vertex and the other lies transversely, is even less common, only 4 cases having been reported. The rarest form of obstruction occurs where both present by the breech, and of this variety 3 cases are recorded in the literature. By far the commonest variety appears to be true 'chin-to-chin' locking, where the first foetus presents as a breech and its aftercoming head is held up by that of the 2nd twin having come to lie below it. Of this type of locking, we have been able to obtain details of 27 cases, and reference is made by McLintock[1] to a further 7, the details of which are unfortunately not available to us.

In studying the reports of cases of the latter variety of locking (breech and vertex), we were impressed by the striking similarity of the circumstances under which many of the authors, particularly amongst the earlier ones, were called to these labours. Only too often did they arrive to find the first baby born by the breech as far as the umbilicus and already lifeless. How they made the diagnosis of locking and, nothing daunted, variously set about the delivery, makes fascinating reading and, the truly remarkable salvage rates for the second twin, speak volumes for the dexterity of past generations of obstetricians. However, with improvement in antenatal care and the more universal availability thereof to expectant mothers, X-ray diagnosis of twin pregnancy and hospitalization for delivery under supervision of experienced resident obstetrical staff, it is evident from the more recent publications that locking, or the possibility thereof, is now more frequently diagnosed before the breech of the first baby has been born so far as to entail its irrevocable loss. Timely intervention by manipulation or Caesarean section has enabled several recent authors to report highly gratifying cases where both infants survived. We have been fortunate enough to have recently delivered locked twins alive by Caesarean section in a patient of our own, where the operation was carried out for indications quite unrelated to the locking. This complication, however, became apparent only during the abdominal delivery. Whereas our survey of the literature has made us humbly aware of the fact that this unique experience of having practically completed the ideal treatment of twin locking at the time of making the diagnosis, has not been the good fortune of any of the previous authors on the subject, we have thought fit to publish a report of our own case. Moreover, there were several features amongst the pre-operative clinical findings which, in retrospect, fit in rather strikingly with the ultimate finding of locking, and which (on close scrutiny of previous case records) have been proved not dissimilar from the findings therein reported at the stage where locking had not yet been diagnosed.

Eastman[2] remarks that the condition of locked twins has not been encountered once among 950 cases of twins in 75,000 deliveries at Johns Hopkins Hospital. If a man of his experience (not forgetting Smellie[1]) has never met with this complication, it is most unlikely that many readers of this communication will do so. However, should our observations stimulate enough interest to occasion the taking of a few more intrapartum X-rays to exclude locking, where the possibility suggests itself at an early and favourable stage, the publication of this paper will have been justified. Moreover, we hope that our review of the literature and list of references will be as useful to future authors as we have found that of Lawrence.[3]

Case Report

A primigravida, aged 21, was first seen at the 22nd week of her pregnancy. Both her own and her husband's mothers had had twins. She attended regularly for antenatal examinations, at monthly intervals until the 30th week, and thereafter fortnightly. Weight gain, blood pressure and urine were normal at all visits, and oedema absent. The uterus was found throughout to be very tense and rather tender; and at no time was it possible to make out the lie of the foetus. The progressive enlargement of the fundus was never in excess of what was expected for the dates, and foetal heart tones were heard on the right side below the umbilicus. All was well until the 36th week, when the patient had a small painless antepartum haemorrhage and her blood

pressure was noted to be 140/100 mm. Hg. A few days' rest in hospital on low salt diet brought her blood pressure down to its previous level of 120/80 mm. Hg where it remained until 3 days before she went into labour, when it was again recorded at 140/100 mm. Hg. On this day, also, a second foetal heart was heard in the left hypochondrium. It was still quite impossible to make out the lie of the twins or to feel any definite foetal parts, owing to the extraordinary tenseness and tenderness of the uterus. There had been no repetition of the small blood loss she had had some 4½ weeks previously. At no time was there albuminuria. She was put to bed.

Labour commenced at 2 a.m. on 28 March 1958, the day after her calculated expected date of delivery. The membranes ruptured at the onset. During the next few hours, in the presence of good contractions, which soon occurred every 3 minutes, her blood pressure rose to 160/110 mm. Hg and ++ albumen appeared in the urine. She also developed bruises on her legs and arms, her nose commenced bleeding, and she vomited dark altered blood. Later, blood appeared in the urine as well.

Blood investigations, carried out at this stage, gave the following values: Haemoglobin 12·9 g.%, packed cell volume 37%, leucocytes 12,600 per c.mm. (neutrophils 78%, lymphocytes 15%, monocytes 7%); platelets 305,000 per c.mm. (normal in morphology), fibrinogen 400 mg.%, prothrombin time 20 seconds (normal 14), prothrombin index 70%, blood group B, Rh positive. The blood picture was, therefore, within normal limits, apart from the prothrombin values, which were not so abnormal as to be within the 'bleeding range', but which might suggest deficiency of prothrombin, factor V or factor VII. There was no time for carrying out the more intricate specific tests for these factors, and the above values were determined by the Quick method.

The uterus remained very tense and tender, and it was quite impossible to distinguish contractions, which the patient was seen to experience at 3-minute intervals. As before, it was impossible to outline foetal parts. The uterus reached to the xiphisternum and did not feel broad (as is usual in the presence of twins). Only 2 poles could be felt, at the fundus and pelvic brim respectively. Two foetal hearts were audible, in the right iliac fossa and left hypochondrium respectively, both markedly irregular at different rates. They were auscultated carefully for about 15 minutes; the former slowed to 70 beats per minute, then picked up to 108; whilst the other slowed to 90 per minute and picked up to 140.

Oxygen was administered to the patient and she was given an intramuscular injection of 10 mg. of synkavit. Vaginal examination was next carried out and revealed a smallish female breech in the pelvis in the RSP position, with the cervix well applied to it, thin, and 4 fingers dilated. Pelvic measurements were adequate.

The diagnosis was made of foetal distress in the first stage of twin labour, in the presence of moderately severe preeclamptic toxaemia and (possibly) concealed accidental haemorrhage, with an abnormal bleeding tendency. It was decided to carry out an immediate Caesarean section as the only hope of delivering both babies alive.

At operation, there was a small amount of free blood in the peritoneal cavity, and the uterus was cyanotic in appearance but not Couvelaire. After opening the lower segment, the breech of the first infant was dislodged with some difficulty from deep in the pelvis. The arms were delivered, and then it was found that the head would not come. With traction, the head of the second twin appeared in the incision, still within its amniotic sac. The sac was ruptured, and this infant delivered as a vertex from where it had been locked by its chin below that of the presenting twin. The latter was thereafter delivered with ease as a breech. The placenta, which was small for twins, was single with 2 amnii and 1 chorion. There was a small 2-inch square retroplacental clot and corresponding depression. The patient's ovaries and tubes were normal. The operation was completed in routine fashion. One was struck by the finding that there was very little bleeding from the uterus, but diffuse oozing from the subcutaneous fat, which could only be controlled by multiple figure-of-eight fat sutures.

The babies were uniovular mirror-image females, one having a double little toe on the right foot and the other an extra little toe on the left foot. A paediatric colleague was in attendance at the delivery, and found his charges in good condition, requiring no real resuscitation, and exhibiting no other congenital

TABLE I. RESUME OF CLINICAL FINDINGS

No.	Age	Parity	Maturity	Initial clinical findings	Eventual clinical findings	Management (1) 1st foetus. (2) 2nd foetus	Weights of infants 1st lb.	Weights of infants 1st oz.	Weights of infants 2nd lb.	Weights of infants 2nd oz.	Outcome to infants 1st	Outcome to infants 2nd	Uniovular or Binovular	References
1	24	0	40	Called in 2nd stage.	Breech born as far as umbilicus. Dead. 2nd head felt below 1st.	Disengagement. (1) Extraction. (2) Version and extion.	4	0	3	12	SB	A	Not stated	Russell[4] (1938)
2	?	0	40	Called in 2nd stage—in labour 3 days. Tonic contraction of uterus.	Breech born as far as umbilicus. Dead. 2nd head felt below 1st.	(1) Decapitation. Extraction of trunk. (2) forceps.	Large		Large		SB	A	Binovular	MacDonald[5] (1912)
3	19	0	40	Called in 2nd stage. Neither foetal heart audible.	Breech born as far as shoulders. 2nd head locked below 1st.	Disengagement. (1) Extraction. (2) Version and extraction.	4	2	4	13	SB	SB	Uniovular	Bowles[6] (1938)
4	24	0	36	Called in 2nd stage.	Breech born to umbilicus. Dead. 2nd head locked below 1st.	(1) Decapitation. Extraction. (2) Forceps	?		4	9	SB	A	Binovular	Tonkes[7] (1952)
5	?	?	?	Called in 2nd stage.	Breech half born. Dead. 2nd head found to be below 1st.	Second foetus (2) delivered first with forceps, (1) then extracted.	?		?		SB	A	?	Broers[8] (1856)
6	?	?	?	Called in 2nd stage.	Breech born to umbilicus. Dead. 2nd head found below 1st.	(1) Decapitation. Extraction. (2) Forceps.	?		?		SB	A	?	Stenström[9] (1951)
7	33	4	?	Called in 2nd stage.	Body of 1st child outside vulva. Another head tightly in pelvis.	(1) Decapitation 'with brass pianoforte wire'. (2) Forceps, then forceps to 1st head.	Not stated		Not stated		SB	SB	Not stated	Bunting[10] (1875)
8	?	0	37	Presumably called in 2nd stage.	Findings presumably as in the foregoing cases.	(1) Decapitation. (2) Forceps.	4	10	5	2	SB	A	Not stated	Gebse[11] (1926)
9	?	0	33	Presumably called in 2nd stage.	Presumably as in foregoing cases.	(1) Decapitation. (2) Forceps.	4	0	4	0	SB	A	Binovular	Whitfield[12] (1937)

9	?	0	33	Presumably called in 2nd stage.	Presumably as in foregoing cases.	(1) Decapitation. (2) Forceps.	4	0	4	0	SB	A	Binovular	Whitfield[78] (1937)
10	19	1	40	Admitted end of 1st stage. Large abdomen. Identification foetal parts or hearts difficult.	2nd head discovered in pelvis after arms of 1st delivered. Hearts stopped.	Perforation of 2nd head. Traction on (1). Perforation and extraction. Extraction (2).	5	6	5	0	SB	SB	Binovular	Gordon[13] (1956)
11	25	4	36	Abdomen tense. No small parts palpable.	Descent ceased at scapulae. Arms extracted. Another head felt.	(1) Decapitation. Extraction. (2) Forceps.	5	4	5	12	SB	SB	Binovular	Geggie[14] (1947)
12	31	2	36	Difficult to make out lie; ? breech, ?? twins. Tense. P.V. breech. Induction for toxaemia.	Breech born as far as shoulders. Dead. 2nd head felt below 1st.	(1) Decapitation. Extraction of trunk. (2) Spontaneous vertex.	4	4½	4	5	SB	A	Binovular	Te Groen[15] (1938)
13	33	0	39	Antenatally uterus large. Difficult to make out lie. X-ray ordered. Failed to attend.	Breech born to umbilicus. Arms. Traction failed. Cord stopped.	Disengagement. (1) Extraction. (2) Forceps.	Not stated		5	1	SB	A	Uniovular	Spence[16] (1937)
14	34	0	36	Tense uterus. Foetal parts indefinite. X-ray confirmed twins. Induction for toxaemia.	Became shocked in labour. Foetal hearts stopped. Locking at delivery.	Disengagement. (1) Extraction (2) Forceps.	4	1½	4	11	SB	SB	Binovular	Wright[17] (1942)
15	21	0	38	Tense abdomen. Foetal parts difficult to palpate. P.V. small breech. X-ray twins. Toxaemia.	Cord stopped with birth of umbilicus. Traction failed. Locking found.	(1) Evisceration and decapitation Extraction. (2) Forceps	4	10	2	13	SB	SB	Binovular	Wright[18] (1942)
16	19	0	39	? Vertex. not engaged at clinic. X-ray asked. Went into labour. Footling at full dilatation.	No advance. General anaesthesia. Prolapsed nonpulsating cord. Locking.	Disengagement. (1) Extraction. (2) Forceps.	4	0	5	3	SB	A	Binovular	Moore[19] (1933)
17	36	0	36	Twins confirmed by X-ray. Called in 2nd stage.	Breech born to axillae. Dead. Head in iliac fossa. Another engaged.	Disengagement. (1) Extraction. (2) Spontaneous vertex.	3	0	3	0	SB	A	Uniovular	Love[20] (1944)
18	16	0	32	Admitted in labour. Head thought to be entering brim. Two feet felt at full dilatation.	Traction. Advance ceased at level of umbilicus. Arms delivered. Locking found.	(1) Decapitation. Extraction. (2) Forceps.	3	9	3	6	SB	NND	Uniovular	Nicolson[21] (1942)
19	25	0	39	Difficult to palpate. Thought to be oblique. Labour before X-ray. At ½-dilatation, foot felt.	Breech born to umbilicus. Extraction failed. 2nd head found below 1st.	(1) Decapitation. (2) Forceps.	4	12	3	4	SB	A	Uniovular	Hunter[22] (1928)
20	23	0	38	Twins diagnosed by X-ray at 16 weeks. Locking and constriction ring diagnosed at end of 1st stage.	Hips born. No advance. Anaesthesia. Locking and ring confirmed. Cord stopped.	Fillets to (1). Caesarean Section. Decapitation of (1) still necessary.	Not stated		5	0	SB	A	Uniovular	Williamson[23] (1953)
21	36	2	?	Breech diagnosed vaginally in labour, then twins felt abdominally. X-ray confirmed, showed locking possible.	No advance 2nd stage. X-ray: locking. No attempt at extraction.	(1) Displaced upwards. Disengaged. Extracted. (2) Version and extraction.	4	9	8	3½	A	A	Binovular	Friedman[24] (1953)
22	23	1	40	Called in 2nd stage (sister had seen 2 small feet and loop of cord).	Attempt at extraction. Progress ceased at umbilicus. 2nd head then felt.	Disengagement. (1) Extraction. (2) Spontaneous vertex.	4	10	5	3	A	A	Uniovular	Greig[25] (1946)
23	30	1	39	Large abdomen. No definite foetal parts palpable. Two foetal hearts heard.	No advance 2nd stage. Leg and 2nd head, still in its membranes, felt.	Disengagement. (1) Extraction. (2) Version and extraction.	5	3	4	4	A	A	Uniovular	Bradlow[26] (1944)
24	24	2	37	Twins diagnosed at 27 weeks, confirmed by X-ray at 32 weeks. First stage ¼ hour only.	Trunk of 1st delivered, and head then found locked above that of 2nd.	Forceps to 2nd head, and both heads delivered together.	4	0	4	12	A	A	Uniovular	Kimball, Rand[27] (1950)
25	?	?	?	Presumably called in 2nd stage.	Not described by reviewer.	Breech pushed up. Caesarean Section.	?		?		A	A	?	Peters[28] (1937)
26	?	?	?	Not known.	Footling. Cord and vertex.	Caesarean Section.	?		?		A	A	?	Stenström[29] (1951)
27	31	0	41	Easy palpation early in labour. Breech and vertex.	No advance. X-ray showed locking.	Caesarean Section. Crushed chest, (1), by head (2).	6	4	5	8	NND	A	Binovular	Lattuada[30] (1951)
28	21	0	40	Uterus tense. Difficult to determine lie. Only 2 poles palpable, but 2 foetal hearts heard.	Toxaemia. Accidental haemorrhage. Foetal distress in 1st stage.	Locking found at Caesarean Section (2) delivered 1st, then (1).	4	12	5	9	A	A	Uniovular	Hofmeyr, Roux[31] (1958)

A = alive SB = stillborn NND = neonatal death

abnormalities. The birth weight of the infant that had presented first was 4 lb. 12 oz. and that of the other 5 lb. 9 oz. As the mother's right breast had been destroyed by burns in infancy, lactation was suppressed and the twins were artificially fed. They made good progress and when discharged on the 22nd day, weighed 6 lb. and 6 lb. 10 oz. respectively.

The mother's vaginal loss was minimal, but she did not stop bleeding from her nose and gums and she vomited small amounts of altered blood until the evening. When her haemoglobin was found to have dropped to 10 g.% when estimated again the next day, 2 pints of blood were administered. Not unexpectedly, she developed a small wound-haematoma, which became infected but cleared up satisfactorily after probing. Her recovery was otherwise uncomplicated, and she went home on the 15th day to prepare for the reception of her twins.

REVIEW OF THE LITERATURE AND DISCUSSION

A review of the literature will be confined to the variety of true or chin-to-chin locking. As has already been pointed out, many of the authors first saw the cases when the breech of the presenting foetus had already been born. Where clinical findings at an earlier stage are available, we have been impressed by the similarity to those in our patient, and have attempted a review in table form to illustrate some of these points (Table I).

From the table, it will be seen that 7 of the authors,[4-10] and presumably a further 2,[11,12] were unfortunate enough to be called in at the stage when the first twin had already been half born and its heart had stopped. Of these 9 cases, parity is unknown to us in 2, of the others all except 1 were primigravidae. In 7 of these cases, the 2nd infant was saved by the dexterity of the attendants as outlined in the summary of how each individual case was managed.

In only 2 cases, those of Greig[25] and Kimball and Rand,[27] where the authors were busy effecting delivery and the trunk of the first twin had been born when locking was discovered, were both born alive. Greig was called in the 2nd stage for a breech presentation complicated by prolapse of the cord; in Kimball and Rand's case twins had been diagnosed antenatally, and the first stage had only taken ¾ hour. Both these patients had had babies before. The other 2 patients, who had both infants delivered alive vaginally,[24,26] were also multigravidae and both were known to be carrying twins. In these 2 cases the diagnosis of locking was made before any attempt at extraction, and such manipulation was consequently avoided until disengagement had been effected.

Of the 4 cases where both infants were delivered alive by Caesarean section,[28-31] parity is unknown to us in 2; but Lattuada's case[30] and our own were primigravidae and were known beforehand to have been expecting twins.

Of the 11 cases remaining to be discussed,[13-23] 8 were primigravidae and 3 multiparae. All lost the first twin, and 4 lost both. Seven of the 2nd infants were born alive thanks to the management, but 1 died neonatally. All of these 11 patients were first seen at some stage when both infants were still alive and before expulsion of the trunk of the eventually doomed first twin had commenced. In only 4, all primigravidae, was the diagnosis confirmed, and radiological examination had been necessary to arrive at it. In 8 of these 11 cases it had been noted that abdominal palpation and identification of the foetal parts or the lie was difficult, and the uterus was unusually tense in 4. These findings appear very similar to those which puzzled us in our own patient.

We suggest that (1) the possibility of twins be investigated radiologically in all cases where palpatory findings are obscure after the 32nd week, and (2) that the possibility of locking be borne in mind particularly where a twin pregnancy is known to be present (by the presence of 2 foetal hearts or radiological confirmation) but where 2 babies cannot definitely be outlined. This applies particularly in cases like our own, where the uterus felt unusually tense throughout the latter months of pregnancy, and where only 2 poles (the breeches, as it turned out) were palpable, one at the fundus and one at the pelvic brim. Where such conditions apply in a case of twins, an intrapartum X-ray, such as that carried out by Lattuada, might reveal locking or the possibility thereof.

In a multiparous patient, as in those 4 successfully delivered vaginally without loss of either infant,[24-27] a satisfactory outcome by this route might be anticipated, provided that there should be no attempt at extraction before disengagement.

In the primigravida, Caesarean section is strongly advised.

SUMMARY

A case is reported of locking twins, discovered at Caesarean section carried out for foetal distress in the presence of concealed accidental haemorrhage in a primigravida with pre-eclamptic toxaemia and an unexplained bleeding tendency which manifested itself during the first stage of labour.

The literature is reviewed and discussed with special reference to possibly helpful clinical signs which might raise the suspicion of twin locking.

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Leipoldt Memorial Lecture. The Council of the Cape Western Branch of the Medical Association of South Africa has decided to organize an annual open lecture on a subject of general scientific interest for doctors, their wives, and interested friends, in memory of the late Dr. C. Louis Leipoldt, celebrated poet and former Secretary of the Association. The Council has been fortunate, for Prof. M. R. Drennan has agreed to deliver the first lecture on the subject of his present research 'The Role of Sex in Human Evolution'. This lecture will be held in the New Science Lecture Theatre, University of Cape Town on Tuesday 14 October at 8.15 p.m.

INDRUKKE VAN SLAGAARCHIRURGIE IN DIE VERENIGDE STATE VAN AMERIKA

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Op 'n studiereis na die V.S.A. gedurende April, Mei en Junie 1958, het ek die geleentheid gehad om in Minneapolis, Rochester (Mayo Clinic), Houston, Boston, Cleveland, Detroit, San Francisco en op pad 'n paar dae in Londen, slagaarchirurgie te sien of met chirurge te bespreek. Referate en wetenskaplike uitstallings by byeenkomste van die American Association for Thoracic Surgery, die Society for Vascular Surgery en die American Medical Association het verdere indrukke verskaf. Maar, omdat die Verenigde State so groot is en 3 maande nie baie lank is nie, kan wat hier volg nie beskou word as iets meer as indrukke van die plekke wat wel besoek is nie. My indrukke sal onder 3 hoofde ingedeel word, naamlik, die behandeling van kroniese slagaarafsluiting, die behandeling van aneurismas en die verskillende soorte transplantate wat in gebruik is.

KRONIESE SLAGAARAFSLUITING

Kroniese slagaarafsluiting is in die oorgrote meerderheid van gevalle die gevolg van aterosklerose, wat, hoewel 'n verspreide siekte, dikwels net segmentele afsluiting veroorsaak. Simpatektomie word as 'n tweederangse operasie beskou wat net gebruik word waar 'n direkte operasie op die slagaar nie gedoen kan word nie. Die gewone soort geval vir wie 'n direkte operasie gedoen word, is 'n pasiënt met afwisselende kloudikasie en afwesige polse, sonder gangreen en met arteriografiese bewys van 'n redelike slagaar proksimaal tot die afsluiting en 'n goeie uitvloeibaan distaal daartoe. Hoewel gangreen nie noodwendig 'n direkte operasie uitsluit nie, beteken dit gewoonlik dat die kanse om 'n geslaagde direkte operasie te kan doen betreklik klein is. Van die direkte operasies is endarterektomie en omleidings (by-passes), deur middel van een of ander soort transplantaat, die belangrikste. Eksisie van die afgesluite deel word betreklik selde gedoen.

Nadat dit 'n tydlank in betreklike onguns was, het endarterektomie weer vir sekere bepaalde afsluitings sterk op die voorgrond getree. Dit word redelik algemeen aanvaar dat vir kort afsluitings (tot 5 cm. lengte), met 'n redelike vaat proksimaal en distaal (veral vir die eindaorta en arteriae iliacae), endarterektomie 'n baie goeie operasie is. Oor die gebruik daarvan in kleiner vate soos die arteriae femorales en vir langer afsluitings, is daar minder eenstemmigheid. Sommige chirurge beskou dit as 'n onbevredigende prosedure in laasgenoemde soort geval, terwyl ander soos Cannon en Barker (wie se werk ek ongelukkig nie gesien het nie) uitgebreide gebruik van die prosedure maak. Die tegniek van endarterektomie verskil van plek tot plek. Vir heel kort letsels kan van 'n oorlangse snit oor die volle lengte van die afsluiting gebruik gemaak word; of daar kan van 'n enkele dwarssnit (wat soms dwarsdeur die hele slagaar gevoer word), of van twee dwarssnitte gebruik gemaak word. Vir langer segmente word gewoonlik veelvuldige dwarsnitte gemaak en daar word van 'n spesiale instrument met 'n ring of selfs 'n soort ‚boortjie' gebruik gemaak. Aan die onderste einde van die verwyderde ateromateuse massa is dit belangrik om te sorg dat daar nie los randjies intima oorbly nie.

Die gebruik van omleidingstransplantate (‚bypass grafts') in plaas van eksisie van die afgesluite deel met vervanging deur 'n transplantaat, word nou taamlik algemeen aanvaar. Proksimale sy-aan-end en distale end-aan-sy anastomose is die gewone prosedure. Daar word meestal aan 'n baie lang transplantaat voorkeur gegee wat, ongeag die lengte van die afsluiting, op gerieflike plekke proksimaal en distaal ingeplant word, byvoorbeeld in die arteria femoralis communis, proksimaal, en in die arteria poplitea, distaal. Twee betreklike kort snye word gemaak, een om die proksimale en een om die distale vaat bloot te lê en die transplantaat word deur 'n tonnel in die weefsels tussen die twee snitte getrek met besondere aandag daaraan dat dit nie geroteer word nie.

Die gewone ligging van die pasiënt vir so 'n operasie is plat op sy rug met die dye in abduksie en die knieë matig gebuig. Die arteria poplitea word dan blootgelê deur 'n snit langs die mediale kant van die fossa poplitea, of proksimaal of distaal tot die kniegewrig. Prof. C. G. Rob van St. Mary's-Hospitaal, Londen, verkies dat die pasiënt op sy gesonde sy lê met die voet van die geopereerde kant op 'n bankie omtrent 9 duim hoog. Twee chirurge kan dan tegelykertyd werk, een voor by die arteria femoralis en een agter by die arteria poplitea.

In sekere sentra bv. Houston, waar dr. deBakey en sy groep werk, word dit baie belangrik geag dat die proksimale einde van die transplantaat bokant vernoude of twyfelagtige vate ingeplant word. In 'n pasiënt met 'n afgesluite femoralis superficialis en 'n redelike femoralis communis, maar 'n onreëlmatige of vernoude iliaca, sou hulle nie tevrede wees om net 'n femoropoliteale omleiding te doen nie, maar wel 'n aortofemoropopliteale transplantaat. Ek het 'n pasiënt gesien vir wie hulle die proksimale einde van die transplantaat (met verdeling na albei bene) in die abdominale aorta ingeplant het, elke been sy-aan-sy aan die betrokke arteria femoralis communis geheg het en onder in die arteria poplitea ingeplant het. Direkte operasies vir afsluiting of vernouing van die volgende slagare word ook af en toe gedoen:

Die arteria carotis communis by sy verdeling. Aterosklerotiese vernouing of afsluiting van hierdie slagaar kan tot verbygaande hemiparese, gesigstoornisse of tot werklike verlamming aanleiding gee. Soms is die verdikking voelbaar en soms is 'n geruis hoorbaar. Arteriografie kan die vernouing of afsluiting aandui. Endarterektomie (gewoonlik onder algemene liggaamsverkoeling) of 'n omleidingstransplantaat kan toegepas word. Ongelukkig bestaan daar die gevaar dat operasie kan misluk as gevolg van na-operatiewe trombose, en die pasiënt kan met hemiplegie gelaat word wat nie voor operasie bestaan het nie. Dit word dus gewoonlik alleen vir taamlik uitgesproke simptome gedoen.

Aterosklerotiese of aangebore vernouing van een of albei arteriae renales kan 'n seldsame oorsaak van arteriële hipertensie wees. In enkele dergelike gevalle waar die vernouing deur middel van endarterektomie of omleiding of eksisie en transplantaat herstel is, het die bloeddruk na die normale gedaal.

Kort gelokaliseerde afsluitings van die arteriae coronariae is in enkele gevalle al deur endarterektomie oopgemaak, maar die metode word nog maar baie selde toegepas vergeleke met die soort operasie van Beck of van Vineberg.

Professor Rob hou alle pasiënte wat direkte slagaaroperasies vir aterosklerose gehad het, vanaf die derde dag permanent op Dindevan, nie soseer omrede van die operasie nie, as omrede van die aterosklerose wat die neiging tot trombose vergroot.

ANEURISMAS

Eksisie en vervanging met 'n transplantaat is die erkende behandeling van die oorgrote meerderheid van perifêre en aorta-aneurismas.

Die gewone aneurisma van die abdominale aorta, distaal tot die nierslagare, word sonder veel voorbehoud uitgehaal en met 'n transplantaat vervang. Ek het een sien verwyder wat letterlik nie groter as 'n halwe okkerneut was nie, en twee wat maar net omtrent soos tennisballe was. Van die ‚papajas' en klein voetballetjies wat ons hier soms sien het ek nie een raakgeloop nie. Een puntjie i.v.m. eksisie van abdominale aneurismas wat ek nie sien toepas het nie, maar wat deur Powers, Boba en Stein voorgestel word, is die gebruik van Arfonad gedurende die afklemmingstydperk om nierkomplikasies te verminder.

Die seldsame abdominale aorta-aneurismas wat bokant die arteriae renales geleë is (en gevolglik ook die arteriae coeliaca en mesenterica superior insluit), word ook aangepak, gewoonlik met behulp van omleidings of verkoeling of die pomp-ogsigenator. Dit is tot dusver nog 'n baie groot operasie met 'n hoë sterftesyfer.

Aneurismas van die aorta descendens word op verskillende maniere behandel, onder andere met behulp van 'n bloedpomp (die pompgedeelte van die pomp-oksigenator) wat bloed uit die linker atrium neem en dit in die arteria femoralis terugpomp om die sirkulasie onderkant die afgeklemde aneurisma in stand te hou. Hierdeur word rugmurgbeskadiging deur tydelike ischemie voorkom, maar weens die wisselvalligheid van die arteriële toevoer na die rugmurg, kan dit gebeur dat eksisie van die aneurisma die hoofbron van die rugmurg se arteriële toevoer saam verwyder, met daaropvolgende verlamming. Eienaardig genoeg is daar al 'n geval van eksisie van die hele aorta descendens beskryf sonder rugmurgbeskadiging.

Aneurismas van die aortaboog self word soms aangepak, en wel met behulp van omleidings of van die pomp-oksigenator. Wanneer laasgenoemde vir ascendens of boog-aneurismas gebruik word, word die hele sirkulasie gewoonlik deur die pomp-oksigenator oorgeneem soos by 'n oop hartoperasie. Die aantal gevalle wat geopereer is, is nog maar betreklik klein en die sterfte-

syfer baie hoog, maar die verbasende feit bly dat daar wel enkele suksesse aangemeld is.

TRANSPLANTATE

Terwyl prof. Rob van St. Mary's en dr. Cockett van St. Thomas's in Londen nog beslis aan slagaar-homotransplantate voorkeur gee, was daar in die V.S.A. 'n duidelike ommeswaai ten gunste van sekere bepaalde soorte plastiese prostese. Chirurge soos deBakey en sy span in Houston, en Szilagyi en sy medewerkers in Detroit, het 'n paar jaar gelede groot reekse oorplantings met homotransplantate gedoen, maar albei hierdie groepe maak nou feitlik uitsluitlik van sekere soorte plastiese prostese gebruik. Tog word daar nog op enkele plekke op groot skaal van homotransplantate gebruik gemaak, byvoorbeeld by die Cleveland Clinic, waar dr. Humphries en sy groep al meer as 500 homotransplantate gebruik het. Sy standpunt is dat ten spyte van 'n klein persentasie komplikasies soos trombose, infeksie of aneurismavorming, sy resultate goed vergelyk met enige ander soort transplantaat. Verder wys hy daarop dat plastiese prosteses voortdurend verander word en dat selfs die nuutste soorte wat nou populêr is, maar net 12-18 maande in gebruik is. Hy verkies dus om voorlopig by homotransplantate te bly totdat een of meer plastiese prosteses hulle meerderwaardigheid op die lang duur bewys het.

Die voorstanders van die nuwe plastiese prosteses maak daarop aanspraak dat selfs in die meer perifêre vate, wat tot dusver met plastiese prosteses meer moeilikheid opgelewer het as met homotransplantate, daar nou net sulke goeie, of beter, resultate as met homotransplantate gevind word.

Dr. deBakey se groep het hulle nuwe ‚konsertina' Dacron (‚crimped Dacron') al in meer as 300 gevalle gebruik en vind tot dusver (langste opvolg omtrent 18 maande) dat hulle resultate beter is as wat hulle voorheen met homotransplantate of met ander soorte plastiese prostese behaal het. Dr. Szilagyi van die Henry Ford-Hospitaal, Detroit, het 'n noukeurige studie van die voor- en nadele van die verskillende soorte transplantate gemaak. Hy meen dat die liggaam nie altyd homotransplantate so volkome aanvaar soos wat gewoonlik geleer word nie. In sommige gevalle word die transplantaat wel aanvaar, maar in ander word dit òf onmiddellik verwerp òf geleidelik gesekwestreer. Deur middel van baie noukeurige opvolging (met insluiting van roetine jaarlikse arteriografie), vind hy dat daar meer laat komplikasies ontstaan as wat algemeen aangeneem word. Waar die toestand by kliniese ondersoek nog bevredigend lyk, sien hy dikwels op die arteriogram aneurismale veranderinge wat baie waarskynlik later moeilikheid sou veroorsaak het. Omrede van hierdie moeilikhede met homotransplantate, en omrede van die goeie resultate wat hy kry met sy Helanca Dacron prostese, verkies hy nou laasgenoemde bo homotransplantate. In meer as 60 gevalle wat tot omtrent 15 maande gelede geopereer is, was die resultate ook wat betref femoropopliteale transplantate omtrent net so goed as wat hy voorheen met homotransplantate gekry het.

Die vooruitsigte dat homotransplantate met nuwe plastiese prosteses vervang sal kan word is rooskleurig, maar dit kan nog nie as 'n uitgemaakte saak beskou word dat hulle met sekerheid homotransplantate gaan verdring nie. Die gebruik van outogene venatransplantate in die perifêre vate word ook nog deur sommige chirurge aanbeveel bv. deur dr. R. R. Linton van Boston. Sy voorkeur is soos volg: (1) Outogene venatransplantaat, (2) endarterektomie, (3) slagaarhomotransplantaat en (4) plastiese prostese. Daar bestaan dus tog meningsverskil en die toekoms sal nog moet wys of die nuwe plastiese prosteses op die lang duur sonder komplikasies bevredigend sal bly. In hierdie verband moet daarop gewys word dat Vinyon-, Nylon- en Ivalon-transplantate in die verlede ook met groot verwagtings aangekondig is, maar na 'n paar jaar laat vaar is.

Plastiese prosteses word nie meer van gewone lappe (wat in die klerewinkel gekoop word) met die hand of die naaimasjien gemaak nie. Hulle is by verskillende firmas gereed vir gebruik te koop in verskillende groottes en vorms. Ivalon word glad nie meer gebruik nie en Nylon is vinnig besig om te verdwyn omdat dit mettertyd verswak. Dacron en Teflon is op die oomblik die gunstelinge. Om een van die nadele van vroeëre plastiese prosteses, wat genoeg was om oor 'n buigvlak te knik, uit te skakel, word van een van twee metodes gebruik gemaak: (1) Die buis word 'n gekartelde of ‚konsertina'-vorm gegee wat dit meer elasties maak en toelaat dat dit skerp gebuig word sonder om te knik. Die oorspronklike Edwards-Tapp ‚crimped nylon tube' word nou in Teflon gemaak en is in taamlike algemene gebruik. Dr deBakey en sy groep gebruik 'n ‚crimped Dacron'-buis, waarmee hulle tevrede is. (2) Dr. Szilagyi gebruik 'n Helanca Dacron-buis wat nie gekartel is nie. Sy elastisiteit word verkry deur die Dacronvesels, wat in die lengte van die buis gebruik word, deur die Helanca-proses elasties te maak. Die elastisiteit voorkom ook dat dit oor buigvlakke knik.

Die meeste van hierdie plastiese prosteses is so poreus dat dit wenslik is om hulle vooraf te ‚bestol' (‚preclot') om te veel bloedverlies by operasie te voorkom. Selfs met bestolling vooraf vind daar soms gevaarlike tydelike lekkasie plaas. Voldoende hoeveelhede bloed moet dus altyd by operasie beskikbaar wees. Pogings word nog altyd aangewend om die porositeit soveel te verminder dat lekkasie nooit gevaarlik sal wees nie. Sommige, soos die Helanca Dacron van dr. Szilagyi, moet nog by gesnyde rante met hitte verseël word om uitrafeling te voorkom. Ander, soos die van dr. deBakey, het dit nie nodig nie en kan op enige manier gesny of gelas word. Laasgenoemde ‚crimped Dacron' het egter 'n growwer voorkoms en lyk op die oog minder geskik vir kleiner vate, hoewel ek nie kan sê of dit uit die resultate die geval blyk te wees nie. Daar is dus verskeie soorte plastiese prostese op die mark, elk met sy voor- en nadele, en dit is redelik seker dat daar nog verder verbeterde soorte mettertyd sal verskyn.

Ten laaste is daar hierdie indruk, wat nie alleen op die slagaarchirurgie van toepassing is nie, maar op alle onderdele van die geneeskunde: Die geweldige somme geld wat in die V.S.A. tot die beskikking van geneeskundige navorsing geplaas word, en die feit dat 'n groot deel hiervan vrywilliglik deur die publiek geskenk word. Mens se mond hang oop (en water tegelykertyd) as jy sommige diere-operasiesale sien wat beter toegerus is as menige operasiesaal in ons groot hospitale.

UNIVERSITEITSNUUS

GENEESKUNDIGE NAVORSING AAN DIE UNIVERSITEIT VAN STELLENBOSCH

Navorsing het vroeg 'n inslag gevind by die jongste Suid-Afrikaanse geneeskundige skool, nl. die Geneeskundige Skool van die Universiteit van Stellenbosch by die Karl Bremer-Hospitaal in Bellville. Hierdie inrigting is terdeë bewus daarvan dat sy kwaliteit as mediese skool hoofsaaklik bepaal sal word deur sy navorsingsbedrywighede. Dit is dan ook insiggewend om daarop te let dat een jaar na die aanvang van dié opleidingsentrum, die personeel in staat was om 'n volle dag te wy aan die lewer van referate en uitstallings in verband met navorsingswerk wat gedurende die eerste jaar uitgevoer is. Die Suid-Afrikaanse Tydskrif vir Geneeskunde het dan ook van sy uitgawes spesiaal gewy aan die werk wat dié dag gelewer is. Hierdie geleentheid is weer suksesvol die tweede jaar herhaal.

Eksperimentele werk is van die staanspoor af aangevoer, en veral het dr. B. de V. Dreyer ver gevorder met die gebruik van die hartlong-masjien met die oog op oop hartoperasies. Hy het die studies wat hy hier plaaslik gedoen het nou verder voortgesit in Cleveland, V.S.A. onder leiding van dr. Kolff.

Die W.N.N.R. het ook erkenning verleen aan 'n navorsingsgroep wat degenerasie-siektetoestande ondersoek. Dié groep staan onder leiding van prof. A. J. Brink. Een van die lede van hierdie groep, dr. L. Potgieter, werk tans in die Verenigde State van Amerika in die Lankenau-Hospitaal waar hy spesiale aandag skenk aan die kardio-vaskulêre probleme van oudwording, en waar hy deelneem aan 'n studie van die koronêre sirkulasie by hipertensie.

Die navorsingsbedrywighede van die degenerasie-siektegroep, is tans hoofsaaklik gemik op die studie van hipertensie. Verskeie ander waarnemings word ook nog deur die groep gedoen, onder andere hemo-dinamiese studies, long funksie-proewe en werk op die gebied van die kunsnier. Daar word verder ondersoekwerk gedoen na die voorkoms van spontane subarachnoïede bloedings in die Unie van Suid-Afrika en ook 'n vergelyking hiervan tussen die verskillende rasse.

Die afdeling verloskunde en ginekologie werk ook tans veral op

die gebied van die probleem aangaande die aanvang van kraam en die etiologie van toksemie van swangerskap.

In die afdeling fisiologie word daar belangrike werk gedoen in verband met die eksperimentele totstandbringing van silikose (dr. Engelbrecht). Ook die departement anatomie is besig met navorsingswerk, o.a. die gebruik van spierweefsel as 'n brug vir die groei van senuweevesels waar daar 'n breuk in die kontinuïteit van 'n senuwee teenwoordig is. Hierdie eksperimentele werk word deur prof. J. F. Kirsten gedoen.

UNIVERSITEIT VAN PRETORIA

By die aanvullende promosieplegtigheid op 13 September 1958 is die volgende grade toegeken:

FAKULTEIT VAN GENEESKUNDE

Sesjarige Baccalaureusgraad in Geneeskunde en Snykunde

Blom, Wilhelm Philippus.
Caplan, Saul Alexander.
Stander, Dudley.
Thiart, Abraham Andries.
Truter, Priscilla.

Plomp, Jan Adriaan.

Graad van Magister in Geneeskunde

Du Toit, Matthys Michielse (Obstetrie en Ginekologie).
Franck, Dirk Jacobus (Oor-, Neus- en Keelheelkunde).
Jordaan, Frederick Richter (Interne Geneeskunde).
Oosthuizen, Ockert Almero (Anestesiologie).
Meyer, Johannes Marthinus.

IN MEMORIAM

WILLIAM BRIAN HUDSON, M.B., B.CH. (RAND), M.R.C.P. (EDIN.)

Prof. G. A. Elliott, o, the University of the Witwatersrand, Johannesburg, writes: William Brian Hudson, who graduated M.B., B.Ch. at the University of the Witwatersrand in 1951, died tragically in a motor accident in the Northern Transvaal on 11 August 1958. His mother died with him.

Dr. W. B. Hudson
Photo: Will Till

Born on 13 July 1927, Brian Hudson received his schooling at Jeppe High School and started his medical course in 1946. Not only did he maintain an exceptionally high academic standard throughout his course, but he was also recognized as a student with an intense vocational drive. Reports on his work in the Department of Medicine never failed to include such phrases as 'excellent practical application', 'excellent theoretical knowledge', 'the most intellectually honest student I have met who never fails to learn from his mistakes', and 'his attitude to his patients is beyond reproach'. These qualities remained untrammeled throughout his undergraduate and postgraduate career up to the time of his death.

At the conclusion of his internship, he spent a year in the Department of Pathology of the University of the Witwatersrand where he again showed himself an apt student and was recognized at once by the students as an able and effective teacher of pathology.

He was awarded a Cecil John Adams Fellowship and proceeded to further his postgraduate studies in Great Britain. There he held a number of appointments. His last one before his return to Johannesburg was that of house physician to Dr. Sheila Sherlock at the British Postgraduate Medical School. Dr. Sherlock spoke highly of his conscientiousness, ability, and quiet but effective, personality. He passed the examinations for the Membership of the Royal Colleges of both Edinburgh and London.

On his return to Johannesburg he was posted to a vacancy on the junior staff of the Johannesburg General Hospital, and soon after was appointed as medical registrar in the Department of Medicine, which post he held to the time of his death. Once again he showed the qualities of conscientious and able application to his work and, in addition to his routine clinical duties, which were considerable, he found time to apply himself to the investigation in a controlled scientific manner of the electroencephalographic changes in hepatic disease. Only a week or two before his death he spent an hour discussing this problem with me and sought advice on the future development of his work. He expressed the hope that a permanent post would one day be found for him in one of the teaching hospitals associated with the medical school. Although only of registrar status, his senior colleagues frequently consulted him on clinical problems associated with the work in which he had made himself so proficient.

Gentle, and at times almost timid in manner, he was a man of firm resolve, who did not deviate from what he considered to be the path of right. He maintained and lived up to his high professional ideals to the end.

Dr. Sheila Sherlock, Physician and Lecturer, British Postgraduate Medical School, London, writes: The Postgraduate Medical School has always endeavoured to welcome overseas doctors during their short or longer visits to London. Since the war, this interchange has increased in volume and many countries are represented in varying capacities on the staff of the hospital. The international team-spirit fostered in this way is one of the most satisfying and enduring experiences enjoyed by us all. High on the list of contributing nations is the Union of South Africa, which has supplied students, house physicians, house surgeons, registrars and consultants to the hospital staff. The South African personality is indelibly imprinted in this admixture of united nations. Today we mourn the loss of one who brought his own rich and individual personality to bear upon the scene. Brian Hudson was my house physician in 1956 and held this post with distinction; but he did more than this, for he entered wholeheartedly as a member of a team both professionally and socially. His charm was pervasive and his exuberance infectious. He inspired remarkable confidence and affection in his patients and he had this attribute most developed of all the house physicians I have had. Long after he left patients would be enquiring about him and his career.

His professional capabilities were well-recognized before his arrival and this promise was amply confirmed both at the Postgraduate Medical School and at the Hospital for Tropical Diseases, where he was resident medical officer. When he left London, we regretted the temporary loss of a friend and we are dismayed that we shall not see him again here. Although I did not meet his mother, I knew her through Brian and this tribute would be incomplete without reference to their deep and mutual devotion.

PASSING EVENTS : IN DIE VERBYGAAN

Dr. J. D. Lumsden, M.B., Ch.B. (Manc.), D.A., R.C.P.S. (Eng.), F.F.A.R.C.S., commenced practice as a specialist anaesthetist with Dr. J. D. M. Barton and Dr. A. I. Pitcher on 1 July 1958, at 410, County Permanent Buildings, Church Street, Pietermaritzburg.

Dr. Arnold Sidley, M.B., B.Ch. (Rand), D.P.M. (Rand), neurologist and psychiatrist, has moved from Harley Chambers to new consulting rooms at 605 Osler Chambers, 215 Jeppe Street, Johannesburg. Telephone 23-8224.

Dr. David Lurie, M.R.C.P. (Lond.) has changed his address to 404 Osler Chambers, Jeppe Street, Johannesburg. Telephone 22-8681 remains the same.

* * *

Dr. Bernard Zilberg, M.R.C.P.E., D.C.H., formerly senior paediatric registrar at the Groote Schuur and Red Cross Childrens' Hospitals, Cape Town, has joined Dr. E. Sanders in specialist paediatric practice at Guardian Assurance Buildings, Gordon Avenue, Salisbury. Telephones: 21038 and 23142.

* * *

Cape Western Branch: Alan Sichel Golf Trophy. This year there was a record entry of 63 for this competition which was won by Dr. P. Neethling of Vredenburg with a Stableford score of 45. Dr. J. van Selm was the runner-up and the best gross return was from Dr. V. F. Fox. Dr. Sichel presented the prizes.

* * *

Dr. O. M. Haarburger, D.O.M.S. (Lond.), of Cape Town, will return to the Union this month after an extensive tour of the UK and Europe. During his tour overseas Dr. Haarburger visited clinics in England, Holland, Spain, Switzerland and Austria and attended the Oxford Ophthalmological Congress and the International Congress of Ophthalmology in Brussels.

* * *

The South African Paediatric Association. The next meeting of the Cape Town Sub-group of this Association will be held on Tuesday 7 October 1958 in the Lecture Theatre, Red Cross War Memorial Children's Hospital, Rondebosch, Cape, at 8.15 p.m. Drs. G. Selzer and P. Smythe of the University of Cape Town will speak on 'Some of the Less Well-recognized Viral Diseases Affecting Infants and Children'.

* * *

Lede word herinner dat hulle die Sekretaris van die Mediese Vereniging van Suid-Afrika, Posbus 643, Kaapstad, sowel as die Registrateur van die Suid-Afrikaanse Mediese en Tandheelkundige Raad, Posbus 205, Pretoria, moet verwittig van enige adresverandering.

Versuim hiervan beteken dat die *Tydskrif* nie afgelewer kan word nie. Dit het betrekking op lede wat oorsee gaan sowel as dié wat binne die Unie van adres verander.

* * *

Mr. David Adler and *Mr. Denis Fuller*, Consultant Thoracic Surgeons, of 6th Floor, Florence Nightingale Building, Hospital Hill, wish to inform their colleagues that as from 1 October 1958, their new address will be: Third Floor, Clarendon Centre, Park Lane (off Clarendon Circle), Parktown, Johannesburg.

Telephone numbers will remain the same: 44-2979 and 44-2362.

Dr. David Adler en *Dr. Denis Fuller*, Konsulterende Borschirurge, van die 6e Verdieping, Florence Nightingale-gebou, wens hul kollegas in kennis te stel dat hul adres vanaf 1 Oktober 1958, die volgende sal wees: Derde Verdieping, Clarendon Centre, Parklaan (naby Clarendon Verkeersirkel), Parktown, Johannesburg.

Die Telefoonnommers sal dieselfde bly: 44-2979 en 44-2362.

The Seventh International Congress of Blood Transfusion. Forty-two nations were represented at the 7th International Congress of Blood Transfusion held at the Palazzo dei Congressi in Rome. Dr. M. Shapiro (Medical Director of the S.A. Blood Transfusion Service, Johannesburg) was President of the section of the congress devoted to organization and technical problems of blood transfusion. At the meeting of the General Assembly of the International Society a new constitution was adopted. This provides for 6 Regional Counsellors to be members of the Executive Council of the Society—one each for Africa, Europe, Asia, North America, Latin America, Oceania and Australia. Dr. M. Shapiro was re-elected to the Executive Council for a further 4 years in the capacity of Regional Counsellor for Africa. The special duty of the Regional Counsellors is to coordinate blood transfusion activities in their regions. At this meeting, the South African Blood Transfusion Service was also officially admitted as a corporate member of the International Society. Corporate membership is restricted to organizations, associations and services of a non-profit making nature of international, regional or national reputation. In London, Dr. Shapiro attended a meeting of the International Standards Organization called to consider the standardization of blood transfusion equipment.

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Unie van Suid-Afrika, Departement van Gesondheid. Nuusbrief nr. 38 *van* 1958. Opgawes van gedugte epidemiese siektes en poliomiëlitis in die Unie gedurende die tydperk 12-18 September 1958.

Pes, Pokkies. Geen.

Tifuskoors. Kaapprovinsie. 2 (Twee) Naturellegevalle van tifuskoors in die distrik St. Marks. 4 (Vier) Naturellegevalle van tifuskoors op die plaas Bonaparte in die distrik Queenstown.

	Poliomiëlitis				
	Bl.	*Nat.*	*Kl.*	*As.*	*Totaal*
Transvaal	–	1	–	–	1
Kaapprovinsie ..	–	1	4	–	5
Natal	–	1	–	–	1
Totaal ..	–	3	4	–	7

Plaaslike Besture	*Bl.*	*Nie-bl.*
Transvaal:		
Gesondheidsraad vir buitestedelike gebied (Johannesburg)	S	1
Kaapprovinsie:		
Blanco-dorpsbestuur	S	1
Cradock-munisipaliteit	S	1
Kaapse afdelingsraad	S	1
Kaapstad-munisipaliteit	S	1
Willowmore-munisipaliteit ..	S	1
Natal:		
Umlazi-distrik	P	1

P=Plattelands. S=Stedelik.

REVIEWS OF BOOKS : BOEKRESENSIES

THE PREMATURE BABY

The Premature Baby. Fourth Edition. By V. Mary Crosse. Pp. x+242. With 39 illustrations. 20s. net. London: J. & A. Churchill Ltd. 1957.

The popularity of this book can be gauged by the fact that the 4th edition has appeared only a few years after the first, and in the interval there have been many reprints. The book is a completely practical one designed for the guidance of nursing and medical personnel concerned with the welfare of premature infants. Every aspect of care is described in great detail ranging from the exact type of clothing most suitable for the babies to the meticulous care necessary in nursing to ensure asepsis and prevent any spread of infection.

Emphasis is placed on the necessity of having nursing personnel specially trained in the care of premature babies and conversant with the techniques of gastric feeding and resuscitation. The nurse should be capable of giving emergency treatment in the event of accidents such as asphyxia or choking. It is also recommended that trained nurses be available to supervise premature baby care in the patient's home. This enables a mother to take her baby home relatively early; the advantage to the baby of a normal environment is obvious.

This book is to be recommended to anyone concerned with premature infants and would be invaluable as a guide in starting a premature baby unit.

D.M.

BIOLOGY OF NEGROES

Biologie du Noir. Matériaux et Recherches. By Georges A. Heuse. Pp. xix+347. Bruxelles: Problèmes d.Afrique Centrale. 1957.

This study of the biology of the African is based on extensive physiological, biochemical and psychological investigations of 100 healthy, black African soldiers stationed in Marseilles. The group was selected in preference to other groups in their home

environment because of the high incidence of disease throughout the tropics and the consequent difficulty in obtaining physiological readings. The book deals not only with this limited group but with many other studied in Africa, and interesting comparisons are made with the corresponding figures for Europeans both in temperate and in tropical environments. Statistical analysis is applied where appropriate.

Blood groups and blood chemistry were studied in detail and many physiological tests were performed. Particular emphasis is laid on neurological and psychological findings. The book has a comprehensive bibliography, a useful appendix, giving practical details of the various tests performed, and an excellent index. It is primarily a reference book and, as such, should be of great value to the physiologist, clinical pathologist, or physician dealing with the African. It brings together much information from very diverse sources.

A.W.S.

BRITISH ENCYCLOPAEDIA OF MEDICAL PRACTICE

The British Encyclopaedia of Medical Practice. Including Medicine, Surgery, Obstetrics, Gynaecology and other Special Subjects. *Medical Progress* 1957. Editor in Chief, The Lord Cohen of Birkenhead, M.D., D.Sc., LL.D., F.R.C.P., F.A.C.P., F.F.R. Pp. vi+339+(14). London: Butterworth & Co. (Publishers) Ltd. South African Office: Butterworth & Co. (Africa) Ltd., P.O. Box 792, Durban. 1957.

This addition to the annual series of 'Medical Progress' reveals steady progress in the advance of medical knowledge, and perhaps more critical and reasoned assessment of the discoveries of the previous years. As in former years, the book is divided into 3 sections. Part I is a collection of critical surveys by various authors on progress in the several branches of medicine, surgery, obstetrics and gynaecology. A fascinating section here is the contribution by Dr. Clarke on medical genetics, stressing the importance of diathesis, constitution or 'soil' in disease. He also has something to say on the genetic effects of radiation. In this section too the subject of vitamins is very fully dealt with by Dr. Leslie Harris. Part II deals with recent developments in pharmacology and therapeutics, and includes the newer antibiotics, tranquillizers, anticonvulsants, the hypoglycaemic sulphonamides, and hypotensive agents. Part III, as before, is a collection of abstracts from the world's Medical literature. The volume maintains the standard set in previous years.

A.L.

ALTERATIONS IN CARDIAC RHYTHM

Rhythmusstörungen des Herzens. Systematik, Ursache und klinische Bedeutung, Therapie. Von Prof. Dr. K. Spang. Mit Beiträgen: *Morphologie des Reizleitungssystems, ihre Orthologie und Pathologie.* Von Prof. Dr. W. Doerr, und *Physiologie der Herzirregularitäten.* Von Priv.-Doz. Dr. W. Trautwein. xvi+548 Seiten. 109 Abbildungen und ein Tafelanhang mit 228 Abbildungen. DM 148.00. Stuttgart: Georg Thieme Verlag. 1957.

The volume is issued in 2 sections—the smaller being a supplement containing many abnormal E.C.G. waveforms. The E.C.G.'s are all numbered and appropriately described in the corresponding chapters.

The author commences this very interesting study by taking into review the work done by great workers of the past century. He subsequently deals with the evolutionary changes, embryology with special reference to the evolutional remnants found in the human heart and their clinical significance.

The comparative anatomy is gone into and structures such as Cuvier's duct, S.A. node; S.V.C.; I.V.C. and azygos vein, together with origin of first heart beat are discussed. It is also pointed out that in some animal embryos the first heart beat commences unilaterally.

Following a resumé of cardiac anatomy the different conducting pathways are described as seen from the histological, anatomical and clinical point of view. The bundle of His is described as well as the role of the S.A. node (and subsequently relay stations) in cardiac arrythmias.

The electrical properties of the heart are discussed and the genesis of the different phases of the E.C.G. explained in terms of elementary physics and E.C.G. diagrams.

The local effect of temperature, poisons and change in normal physiology of the blood and blood vessels are then considered in relation to abnormal cardiac behaviour. Here the importance of the autonomic nervous system and pressure changes in the vascular system is pointed out. The E.C.G. aberrations following such stimuli are explained.

Abnormal conditions such as sinus tachycardia, sinus bradycardia, ectopic beats, flutter and fibrillation of various sources are reviewed and demonstrated by accompanying E.C.G's.

Cardiac nutrition is discussed with special reference to glycogen and the effect of fatty infiltration and the changes in cardiac function following, for example, digitoxin poisoning.

In conclusion the authors review the treatment, uses and misuses of some of the more common drugs used in cardiac abnormalities and emergencies. Drugs such as digitalis, chinidin, quinidine and some other combination and preparations are reviewed and the correct dosage is recommended.

J.H.

MEDICAL MYCOLOGY

An Introduction to Medical Mycology. 4th Edition. By George M. Lewis, M.D., Mary E. Hopper, M.S., J. Walter Wilson, M.D. and Orda A. Plunkett, Ph.D. Pp. xvii + 453. 118 Figures. 2 Plates. $15.00. Chicago: Year Book Publishers, Inc. 1958.

For close on two decades this volume has been recognized as a leading text-book on this branch of medicine. The publication of a new edition is a dermatological event. Professors Wilson and Plunkett have collaborated with the original authors in producing this edition, their main contribution being the rewriting of the chapters on the deep mycoses and on contaminants.

The book has outgrown its original title. To continue calling it 'An Introduction' is an understatement. A very full chapter is devoted to each dermatophyte. The 118 illustrations, are skilfully selected and technically perfect. 'Medical mycology, the oldest of the microbiologic sciences, still presents many unsolved problems. This may perhaps be due to the conservatism of many dermatologists who will not think aetiologically. *Tinea barbae*, for example, is not a clinical entity but can be caused by several distinct fungi, each giving a distinct clinical picture, varying from severe inflammatory swellings to hardly perceptible follicular or scaly patches.'

The practitioner will appreciate the chapters on therapy which is discussed in detail. All the well-known, and some of the lesser known, fungicides are critically evaluated. Most dermatologists will concur with the opinions expressed but few will agree that Castellani's paint should not be used more than once a day.

The book is essential to the library of all dermatologists and clinicians. In this country in particular, where regional mycology still presents an open field for research, every student and practitioner should read this interesting and stimulating work.

J.J.J.

THE NURSING OF MENTAL DEFECTIVES

The Nursing of Mental Defectives. By Charles H. Hallas, S.R.N., R.M.N., R.N.M.D., S.T.D. (Lond.). Pp. 196. 9 Plates. 21s. Bristol: John Wright & Sons Ltd. 1958.

This is a new book which is an excellent textbook on the subject. As the nursing of defectives is mainly concentrated in Government institutions in the Union, and the teaching of nurses takes place at these hospitals, for which a standard textbook for South African conditions has been supplied, it is unlikely that this book will be extensively used in this country. It follows the syllabus laid down by the General Medical Council in England and brings out all the changes and modern trends in this form of nursing, particularly emphasizing the positive outlook.

It could well be read by nurses seeking a wider knowledge based on experience in another country and will no doubt interest all whose work brings them into contact with mental defectives.

A.H.T.

THE DIENCEPHALON

The Functional Organization of the Diencephalon. By W. R. Hess. Edited by John R. Hughes, M.A. (Oxon.), Ph.D. Pp. xii + 180. 61 Figures. $7.00. New York and London: Grune & Stratton, Inc. 1958.

Like the interesting book this author wrote in 1954, *Monographs in Biology and Medicine*, 3, Grune and Stratton, New York, the latest translation of one of his books is well worth the attention of

neurologists and those interested in the physiology of the brain.

It should be made clear that the two books are similar in many respects and the present volume, dealing with the functional organization of the diencephalon, is a more detailed version of the earlier book.

The study of the diencephalon was neglected for many generations by anatomists, physiologists and pharmacologists, and, through the painstaking investigations of Hess, much has been learnt. By the use of fine electrodes inserted into the diencephalon, he was able to map out its physiologically important areas. The localization of these centres was achieved in two ways: first, by stimulating the areas where the electrodes were inserted and recording cinematographically the phases of animal behaviour; and then by studying the histology of the areas stimulated and applying to them a special staining technique.

The fundamental statement made by Hess that, 'it can hardly be wrong to regard the diencephalon, rather than the cortex, as the true central organ of the body' becomes credible when the numerous experiments performed by him are studied.

M.W.

BOOKS RECEIVED : BOEKE ONTVANG

The Compend. A compendium of ethical proprietaries used in medicine and pharmacy. *Addendum for the Year* 1957. Compiled by W. Hetherington, F.P.S. Pp. 74. 5s. Bristol: John Wright & Sons Ltd. 1958.

An Introduction to Surgery. Edited by David H. Patey, M.S. (Lond.), F.R.C.S. (Eng.). Pp. xi + 228. 54 Figures. 17s. 6d. net. Students' Edition 9s. 6d. London: Lloyd-Luke (Medical Books) Ltd. 1958.

List of Films on Human Anatomy and Embryology. 2nd Edition. Pp. 213. 20s. Netherlands Scientific Film Association, Catharijnesingel 59, Ingang Sterrenbos, Utrecht, The Netherlands. 1957.

The Problem of Dental Caries and the Fluoridation of Public Water Supplies. By Douw G. Steyn, B.Sc., Dr. Med. Vet., D.V.Sc. Pp. 208. 4 Photographs. 45s. Johannesburg: Die Voortrekkerpers, Bpk. 1958.

Fractures and Other Injuries. By the Members of the Fracture Clinic of the Massachusetts General Hospital and of the Faculty of the Harvard Medical School. Edited by Edwin F. Cave, M.D. Pp. xvii + 863. 612 Figures. $28.00. Chicago: Year Book Publishers, Inc. 1958.

CORRESPONDENCE : BRIEWERUBRIEK

TISSUE HOMOGRAFTS

To the Editor: In your recent editorial[1] reviewing a portion of the latest research in the field of tissue homografts, your statement that 'organ transplantation is virtually around the corner' is considerably more optimistic than the facts warrant. The survival of animals given supralethal total body doses of X-radiation can be greatly increased by means of bone marrow grafts, to which they are tolerant, but a large proportion of these chimaeras, whose haematopoietic centres have been repopulated by the homograft, subsequently succumb to an *in vivo* antigen-antibody reaction, variously called 'late death', 'secondary disease' or, more accurately, 'homologous disease',[2] which is equally fatal, and rather more quickly so, than the average leukaemia. You may have noticed in the paper by Barnes, *et al.*,[3] quoted in your editorial, that some 60% of the leukaemic mice treated with 1,500 rad total body dose, followed by bone marrow injections from donors of another strain, died from causes not attributable to leukaemia. Although there is still some controversy about the causation of this disease, the consensus of opinion seems to be that immunologically active cells in the graft, which has proved temporarily life-saving to the lethally irradiated animal, begin sooner or later to react against the foreign tissue proteins of the host. Characteristically, *isogenic* bone marrow or spleen, i.e., taken from a donor of the same inbred line as the recipient, does not produce the disease, but the R-E system is so sensitively poised with respect to protein histocompatibility, that a difference between host and graft of *one* allele at the H-2 locus will result in homologous disease.[4] Moreover, the phenomenon has been observed in non-irradiated F_1 hybrids in which a splenic graft from one inbred parent 'takes' and produces antibodies against the tissue components of the other parent present in the hybrid.[5] It has also been described in animals that have been rendered tolerant to foreign proteins during foetal life, where the tolerance is induced by immunologically reactive tissue such as spleen.[6] In fact, the only moderately successful attempt, thus far, to defeat the formidable protein barrier in the homografting of bone marrow and spleen, has been to use tissues from foetal donors which are relatively less reactive than those of the adult.[7] Therefore, 'people killed in accidents who have not died in vain' would have to be very young indeed to be of any therapeutic value.

Since human beings, with the exception of uniovular twins, cannot have the uniform genetic composition of inbred mice, the transplantation of tissues and organs is feasible only where the recipient is (*a*) heavily irradiated, (*b*) hypogammaglobulinaemic, or (*c*) made tolerant to the antigens of the graft during very early infancy. However, the introduction of lymphoid elements into these immunologically incapacitated individuals could have the most serious consequences. In the words of Billingham and Brent, who together with their colleague, Professor Medawar, are the leading experts in the field of homografts, '. . . the concept of a graft versus host reaction must be carefully considered before any form of therapy is applied which may not only defeat the surgeon's objective but also cause immeasurable harm to the patient'.[8]

A. Cohen

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17 September 1958

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4. Uphoff, D. E. and Law, L. W. (1958): J. Nat. Cancer Inst., **20**, 617.
5. Cole, L. J. and Ellis, M. E. (1958): Science, **128**, 32.
6. Simonsen, M. (1957): Acta Path. Microbiol. Scand., **40**, 480.
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HYPNOSIS

To the Editor: As you probably know, there has of latter years been an upsurge of interest in medical and scientific hypnosis throughout the world. Both the B.M.A. and A.M.A. have of recent years accepted it, and have encouraged the undergraduate and postgraduate study of this subject. I know there are many practitioners and dentists who are interested in, and use hypnosis, in their practices.

Could I, through your columns, ask all interested members of the medical and dental fraternities, or associated sciences, to contact me at the address below with the purpose of possibly (1) forming a South African Society for Clinical and Experimental Hypnosis, and (2) associating ourselves with an international society, which is now in the process of formation, and which I am at present representing.

The Society has as its objects:

(*a*) To stimulate and improve professional research, discussion and publications pertinent to the scientific study of hypnosis.
(*b*) To encourage relations among scientific disciplines with regard to the study and application of hypnosis.
(*c*) To bring together persons using hypnosis and to discuss the standards for professional adequacy and training in the field.

The object of this body will also be to form a local society which will encourage and promote the highest ethical standards and avoid the indiscriminate use of hypnosis in South Africa.

M. Herman

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16 September 1958